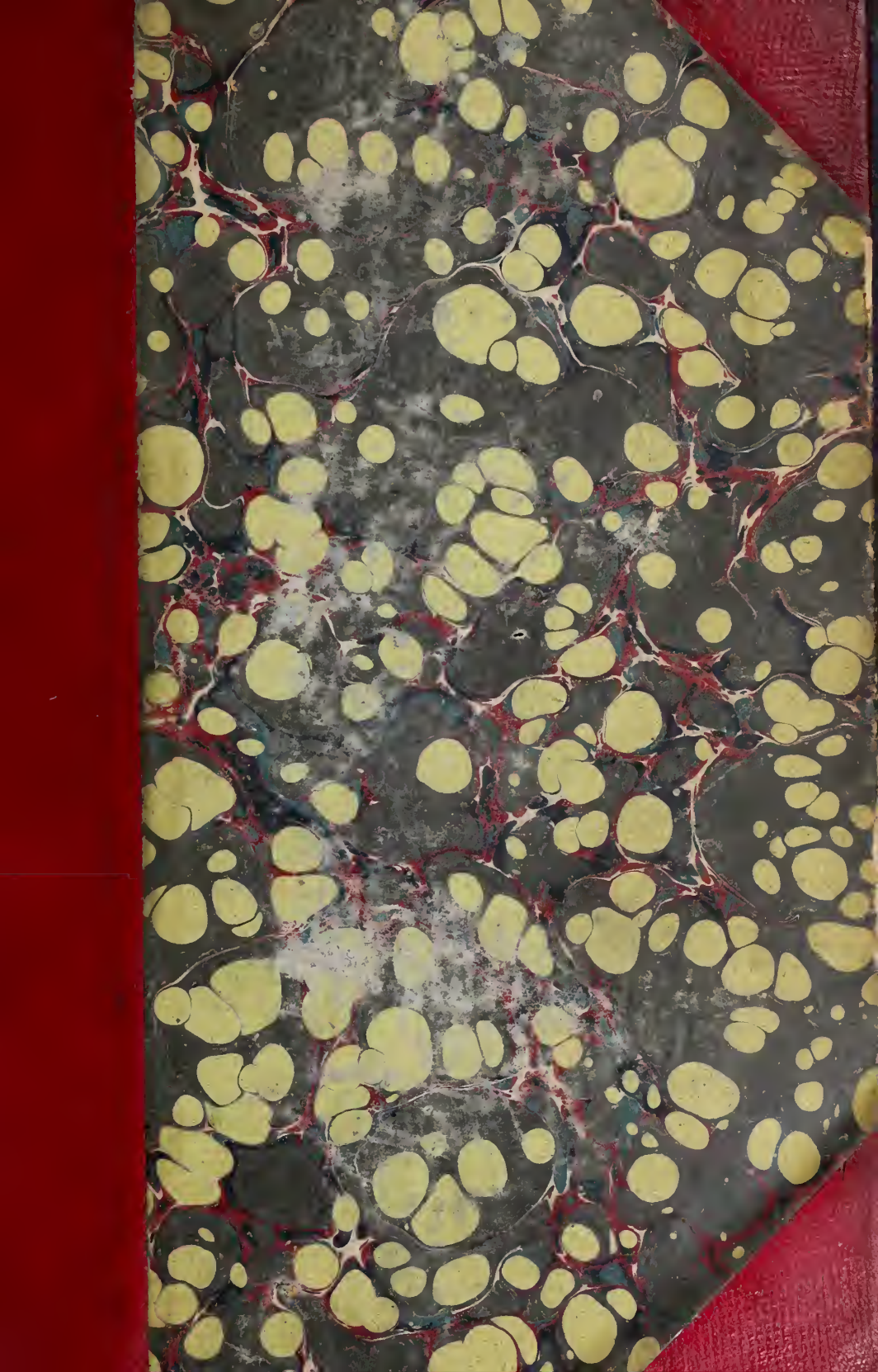
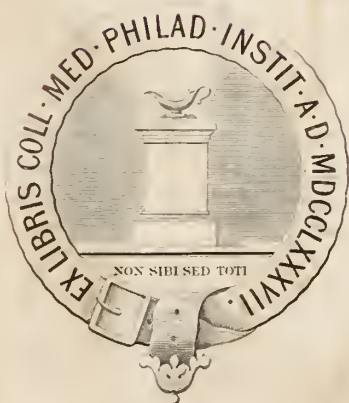




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A MONTHLY JOURNAL, DEVOTED TO THE
EDUCATIONAL, SCIENTIFIC AND PRACTICAL INTERESTS
OF THE
MEDICAL PROFESSION.

EDITED BY
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Original Contributions.

ARTICLE I.

OVARIAN TUMORS.

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II.—ANATOMY, NATURE AND PATHOLOGY OF OVARIAN TUMORS.

Ovarian tumors spring from, and are for the most part formed of the hypertrophied tissues of the ovaries. There are tumors very much resembling, and often mistaken for them, however, developed in the lateral ligaments. These latter are generally distended and hypertrophied sacs of the parovarium, and contain thin serum, merely; are cured sometimes by merely tapping, or spontaneously burst or are broken by accident in the peritoneal cavity, and disappear, never again to annoy the patient. The fallopian tubes sometimes are the seat of enlargement. The tubical canal becomes obliterated at each end, and fills up with the hilus usually appropriated to the lubrication of its inner surface, hypertrophies in tissue and thus constitutes a morbid development. Although rare, these two forms of tumors are observed. Doubtless, other enlargements of a nature not yet properly understood, are sometimes originated by unknown causes. The anatomical distinctions can be made in most instances by careful dissec-

tions, so that in cadaverous investigation, they need not be confounded with the ovarian tumors, except it be where all tissual distinctions are obliterated by an inter-current or supernatant disease. It is not my purpose, now, to pursue this subject further than the mere mention here made. In the proper ovarian tumors, we may trace three coats or layers of tissue forming their walls. The external is the serous or peritoneal. It is shining and smooth as this membrane is elsewhere, and seldom changed in anyway, except it may be thickened and hypertrophied. It can be traced into the peritoneal covering of the viscera and abdominal parietes, and consequently needs no elaborate description. The internal coat or lining membrane, is doubtless the *membrana granulosa* of the ovisac, very much hypertrophied. When small, something like epithelium seems to be its entire composition. As they grow and develop, the epithelial arrangement is less perfect, until when very large, we can observe it only in patches. In many cases when thus large, this membrane has a smooth, lustrous appearance, but in others, it is more or less thickly studded with granular projections, varying from almost imperceptible minuteness, to the size of peas, or even larger. Regarding the main sac as an hypertrophied ovisac, I think these little granular sacs (for they prove to be sacs upon examination), are also of the same nature, and the origin of the numerous endogenous or supplementary growths which constitute one of the polycystic varieties.

The middle coat is made up from the stroma of the ovary. Its strength depends upon quite a considerable amount of fibres, which enter into its composition. As the tumor develops, these fibres are enlarged, and apparently if not really, increase in numbers, until they constitute the most of the thickness of the walls, and in some parts, make quite a thickness, density and toughness of tissue. These qualities are greater in old large sacs than in the smaller and younger ones. At the pedicle and for some distance up the sides, they are greater than in other portions, being in these parts sometimes a quarter of an inch thick, while at the fundus or distal portion, they may be thin and fragile. The whole of this coat

may be very tough and thick, so as to resist great force, or it may be thin throughout, so as to be easily ruptured at almost any point. Entangled in the meshes of these fibres may be discovered, in many cases, the minute microscopic points, so numerous scattered through the substance of the ovaria. These points are believed to be the origin of the germinal spot in the ovum by some physiologists, and around which are developed the ovum and progressively the whole ovisacs and their contents; and I believe, that their presence in the walls of the tumors over much, if not the whole of their extent, accounts for the development of the minute granular internal projections above described. In a tumor recently removed from the body, we may not unfrequently, by holding it up to the light, discover the peculiar buffy tinge seen in the stroma. The vessels are situated in this coat. They are numerous and some of them large, so large, that great care is necessary to prevent them from bleeding when the peduncle is divided. They are developed (it is hardly necessary to say), to this great size, from the minute twigs which penetrate the substance of the ovary.

The shape of ovarian tumors may vary much. They may be regularly globular, polyglobular, angular, or irregular in almost every way. When small, the ovary may be seen as constituting a considerable portion of the tumor. When large, the ovary may be almost lost in the walls, or observed as a mere tubercle sticking to, or imbedded in its side. Very generally, but one ovary is the seat of disease, but in a few instances, both are affected. Not often do they become consecutively the nidus of these growths; one being first the subject of disease, and then followed by the other. And when such is the case, we are not warranted in supposing the one to be the cause of the other, either remotely or directly. Notwithstanding the above assertion, I do not wish to be understood to say, that sympathetic degeneration between these two bodies is impossible. These tumors divide themselves anatomically into monocystic and polycystic. The one having a single cystic cavity, the other several. The polycystic variety is formed by the development of several cysts adjoin-

ing, or by the side of each other, and independently attached to, or springing from each other on the external surface, or within the cavity of one large one. The instances of polycysts growing by the side of each other, and being independently attached, resembles at first the single. At an early stage of development, they may stand free of contact—one with the other; but as they grow in size, in consequence of the small surface of the ovary to which they are attached, they crowd together, so that it is not always easy to say whether they were not developed from each other. The cysts from which smaller ones grow, are called proliferous. They are doubtless single for some time in their early development, but carrying up, as they increase in size, the proper substance of the ovary, with its rudimentary ovisacs, after a while the inner or outer surface is bulged by the maturity of these last, which, if they do not dehisce and allow the escape of the ovum, still grow into a subordinate tumor. This process is separate, until there is a glomeration of cysts to quite a number, from four to fifty, of various sizes,—from the size of a man's head, down to that of a pin's head. Small ones may be so numerous as to stud a large part of the inner surface with granulated elevations. This is the most frequent variety met with in practice.

There is a great difference in the sensible qualities of the contents of the cysts, in different cases, and of the different cysts in the same case. In some, it is very thin, in others, very thick, and tenacious, while the color shades from black, inky, to liquid clearness. The monocystic, as a general thing, affords thinner, clearer fluid than the polycystic, though this is not invariably so. It is in the monocystic variety, however, that we generally find the solid contents. These solid contents are, for the most part, formed of tegumentary, adipose, hairy, osseous and dental tissues. All these are irregularly developed and distributed, so that no semblance in shape or other conditions can be discovered to an independent being.—as a fœtus. Sometimes the tegumentary substance is small and gives attachments to a few hairs, sometimes the quantity of hair is long and entirely isolated, and either inextricably

knotted together, or straight and few in number. They may be long,—ten or twelve inches, or very short. Irregular bones, or the enamel of teeth, without the bony structures, are often attached to the side of the cavity; but no organic order, symmetry, or completeness, has yet been seen. In fact, should a femur, a scapula, a complete maxilla or other complete organs be developed, the tumor would unquestionably range itself under the head of extra-uterine foetation, and not ovarian disease proper. The tumor containing solid materials of this kind is usually small. Not unfrequently large fibroid growths are observed in the ovary at the base of a single or multiple cystic tumor. These solid fibroid or fibrous growths may be simple or benign in their nature, or malignant. This complication of ovarian dropsy, I think more frequent in persons advanced in years (over forty), than younger ones. The contained fluid of the polycystic tumor, is ordinarily highly albuminous, of high specific gravity, tenacious, and more or less colored. The fluid is so thick sometimes, as not to flow through a small cannula. Blood and pus are the coloring matters of this fluid ordinarily. From one tumor of several cysts, I drew pus from one cyst, dark coffee-ground, sanguino-serous fluid; from another, a beautiful straw color; from still another, a fluid of a delicate azure tint. After tapping, more or less alteration is observed in the fluid, each operation withdrawing fluid affected by chemical or pathological circumstances. In the former putridity or acidity would result, in the latter, the purulent productions of inflammation might be expected, or fibrous concretion, or serum changing the tenacity and thickness of the fluid.

There are some chemical and microscopic resemblances in the fluid from almost all varieties of ovarian tumor. Albumen seems to be almost always present; in some specimens of fluid, strong acids, or heat, causes it to assume a solid form, coagulating and adhering like the white of an egg when cooked in boiling water; in others a small precipitate is all that is observed. Between these extremes, all shades of difference exist, but undoubtedly nearly all ovarian tumors yield highly albuminous fluid. The reaction is alkaline.

Mr. Nunn says that, "as the results of many examinations (microscopie) of different specimens of ovarian fluid, the most constant characteristic of such fluid, is its containing in greater or less abundance, cells gorged with granules; and in addition, circumambient granules having the same measurement encompassed by the cell. The size of the gorged cells and included granules varies greatly even in fluid from different cysts in the same ovary." This description of fluid could, with certainty, remain good of the first evacuation only, as pus and blood globules are not unfrequently found in subsequent evacuations.

I have already stated what I believe to be the nature of the sacs or cysts of ovarian tumors, and it will not be necessary to repeat it; but there is one curious question as to the origin of the solid substances sometimes found in them, which so very much resemble the tissues of a foetus, upon which I feel at liberty to add my conjectures to those of many others, who have written upon ovarian disease. I do not desire to argue elaborately in favor of the opinion I embrace, or against those who adopt a different one, nor to give instances to any extent in proof for, or against. I do not think that the discovery of hair, fat, teguments, bone or teeth, in the ovary in the imperfect state of development, and irregular relationship above described, affords any evidence of impregnation or sexual connection. In explanation of the formation of these tissues, it may be conjectured that the ovaria have such independent cell capacities as will enable them not to form a living being independent of sexual influence, but under certain circumstances, to imperfectly produce tissues of a very elementary nature, resembling those found in the products of impregnation. The tissues of ovarian disease are of the lower grade in a formative sense. We do not find muscle, nerve, or vessel in these places, and under these circumstances. There does not seem to be generic energy enough in the ovum, unaided by seminal impression, to give the direction to cell action for the formation of these more complicated tissues. We should observe, too, that although the cell action of the ovum may start up the formation of these singular tissues, there is no

generic order or completeness in that action. In all this, we see another of nature's distinct modes of formation under peculiar circumstances. I am not aware that in any other part of the body, such a condition of development ever takes place inside of a cyst,—a development which gives origin to so irregular an assemblage of tissues, without the formation of any organ out of them. When fœtal tissues are found elsewhere in the body, or in any part of the male, there is something of organic completeness about them, and perfect bone, tooth, or some or many organs may be distinctly traced; nerve-matter, muscle, etc., and in fact, all the more complicated tissues are met with. These facts, I think, establish a broad difference between the products of conception and the irregular cell or tissue development of the ovum, and I cannot see why the theory I have mentioned, may not explain all the circumstances fully. The pathological condition of the system which gives origin to this affection, is not determined, and perhaps, is not peculiar; in fact, it is probable that the general condition of the patient has nothing to do with the production of ovarian tumors, particularly the dropsical variety. Dr. F. Bird thinks that it is found more frequently in scrofulous or strumous persons, and appears in families subject to phthisis. Statistics have not been resorted to in sufficient copiousness to prove or disprove this opinion. It, according to Dr. Bird, occurs more frequently in patients from twenty-five to thirty-five years of age; is more common in the married than single ladies, and is generally associated with sterility.

I have not much doubt, however, that the state of the ovaries has much to do in starting up these tumors, and it is most likely that inflammatory thickening or condensation of the peritoneal or fibrous envelops of this organ, is the condition. If we imagine the fibrous indusium to be thickened and condensed, so as to be less fragile or less amenable to the influence of the absorbents, and thus, failing to yield to the distension of the maturing ovum, so confine it that the follicular fluid cannot escape, we have incipient ovarian dropsy.

It is only necessary that the unruptured coats of the ovisac should continue to secrete its fluid, and the strong indusium refuse to crack open and allow its escape, to have all the conditions of an ovarian dropsy, that will be limited only by circumstances foreign to those of their origin. However this may be, there can be no question, but that the beginning is the failure to discharge the fluid of the ovisac, and that this last is, in the early stages, the fluid of the ovarian tumor. There is, also, a kind of independent pathology of ovarian tumors: After they are developed to a certain extent, they become subject to accidents and disease, and play an important part in consequence of this fact in the sanitary conditions of patients in whom they exist. Inflammation for instance, attacks them, and causes ulceration in their walls, so as even to perforate them, making a communication between the cavities of contiguous cysts, or with the peritoneal cavity. Without perforating the walls of the tumor, the ulceration may produce a good deal of pus, which is mingled with the other contents of the cyst in which it occurs. General inflammation of its walls may proceed to a fatally exhaustive extent, or spread to the peritoneum, and thus indirectly cause death. Gangrene may also result, which may be confined to the cavity of some of the cysts, and induce a putrid, offensive state of the contents, or perforate the partitions dividing, and thus make a communication between cysts, or open them into the peritoneal cavity. The walls may also rupture from distension, in consequence of their becoming attenuated; or by a violent stroke or fall, or other shock, the tumor may be ruptured, and the contents escape into the peritoneal cavity. By means of ulcerative communication with the fallopian tubes, evacuation of the fluid occurs. Adhesion to the walls from inflammation and ulceration through the parts thus agglomerated, sometimes results, and the fluid so discharged. Inflammation also causes adhesion at various parts. The fibrin effused, glues it to the surrounding parts,—the abdominal walls, the intestinal canal, bladder, and other viscera. Slight inflammation is supposed to increase the effusion in their cavities, and cause them to grow very rapidly. Inflammation,

also, sometimes, no doubt, causes obliteration of the cavity from adhesion of the walls. This is more frequently the case when it results from external causes,—as blows, tapping, pressure, injection, etc. Now it hardly ever happens that these diseased conditions and accidents of the tumors fail to produce their effects upon the health of the patient. No doubt, but that death occurs from extensive disease in the sac without any organ being involved in the trouble directly. A large production of pus would exhaust the patient; gangrene to a large extent would cause death, as extensive gangrene of unimportant organs generally does. But an extension of disease to the peritoneum and surrounding viscera, or by the effusion of the acrid contents of a diseased cyst, are more likely to be the modes of progress to constitutional disturbances inaugurated by inflammation in the tumors. When the tumor is burst, and its contents effused into the peritoneal cavity, the peritoneum seldom escapes without inflammation; but the degree will depend upon the nature of its contents. If they are not vitiated, but consist of the bland albuminous fluid found there ordinarily, it is very slight indeed, and lasts for a very short time only. But should pus, or the ichor of decomposition be mingled with it, we should be prepared to expect serious, if not, fatal results.

I once had an opportunity of observing the progress of a case, for several months, where this rupture and effusion were frequently repeated. About every three weeks the woman would attain to a large size, and a well-defined, large cyst could be felt filling up the whole abdomen, and distending greatly; when suddenly, without premonition or apparent cause, the cyst would give way; the swelling would become more diffuse; fluctuation very evident, and the cyst could be no longer defined by the touch; slight fever and some tenderness of the abdomen would last for two or three days, when copious perspiration and diuresis would evacuate the fluid in a few days more. After this process was completed, the abdomen would be lank, and a small cyst could be felt rising up from the left ilium, it would increase and burst at the end of three weeks, as the other had done before. I saw the patient

frequently while this process was repeated six or seven times, when, as she would not submit to the operative procedure, which I insisted upon, I was dismissed, and an irregular practitioner, who was sure he could cure her, installed in my place. Not long, (perhaps three months) after I was discharged, she died from the inflammation resulting from one of these effusions, probably, because the contents of the cyst had become vitiated by inflammation within its cavity.

But these growths may produce a pathological condition of the system, without becoming, themselves, the seat of disease, by the great size they may attain, mechanically interfering with the functions of the pelvic and abdominal viscera. Before rising out of the pelvis, it may displace the uterus and cause inconvenience from this effect; it may, press upon, and obstruct the rectum, bladder, and urethra, or upon the iliac veins, causing obstruction to the flow of blood, and varicose veins in the legs, phlebitis or phlegmasia dolens; or, pressing upon the nerves, cause neuralgic pains in the limbs, hips, etc. It is plain that such pathological effects, when induced, would be serious, in accordance with the greater or less impaction in the pelvis, by its continued growth. Ordinarily, these inconveniences do not prove very embarrassing to the functions of the important vital organs; but sometimes the case is far otherwise, and life is very much shortened, and health rendered miserable. As it rises into the abdomen, these mechanical troubles are apt to be lessened, and as the room is comparatively so great in that cavity, quite a while elapses before any great disturbance results from mechanical pressure; after awhile, however, the abdominal muscles are distended beyond convenient size, and the tumor is strongly pressed among the viscera. The kidneys, liver, stomach, intestinal tube, in fact, all the abdominal organs may become the subject of great, and even fatal pressure. In many instances, however, enormous size is attained before fatal damage results. One hundred and fifty pints of fluid have been taken at a single tapping. A much less amount in most cases, would produce very grave results by pressure. When the growth is rapid, its mechanical effects will be more distressing, and on the

contrary, the organs accommodate themselves to a great deal more pressure, if gradually brought about.

Besides the inflammatory changes that take place in the tumor, chronic degeneration is occasionally observed. Deposits of earthy substances in the walls, bony spiculæ, etc., are the most frequent. Small tumors, containing solid material, are more commonly thus affected.

The modes of termination are worthy of some consideration. Many cases last through a great many years without materially influencing the general health, and up to the death of the patient, at an advanced age, prove to be nothing more than an inconvenient burden when large, and when small not the cause of even this kind of trouble. But cases of this class are not very numerous, and by a large majority they terminate and leave the patient in the enjoyment of real or comparatively good health, or by their effect upon the constitution shorten her existence. Spontaneously favorable terminations are so rare that we can base no calculation upon them, but were it possible it would be interesting to follow nature through her resources in this respect; and I am sorry that my means for reference are so limited as to prevent me from thoroughly examining this branch of the subject. Perhaps rupture of the sac into the peritoneal cavity, collapse and adhesion of its walls is the most common and favorable spontaneous termination. After the rupture, in cases where cure follows, it is probable that the opening in the sac continues, and that a permanent fistula, so to speak, from the cyst into the peritoneum, places the fluid in contact with a more active absorbing surface, until by the elasticity of its walls it contracts to annihilation, or at the first shock of the rupture, inflammation is originated that causes an obliteration of the cavity of the sac. Dr. Simpson speaks of instances of evacuation through the vagina. The same thing might occur in connection with the bladder or alimentary canal. I have already spoken of adhesion to, and rupture through the walls of the abdomen, and consequent recovery. Inflammation in its proper tissues, no doubt, sometimes arrests the development of and obliterates the tumor without materially affecting the pa-

tient's general health. It is not improbable that other causes, with which we are not acquainted, may likewise operate to the arrest and cure of them, inasmuch as they unquestionably do sometimes disappear in an unaccountable manner.

The local pressure interfering with the functions of the bladder and rectum, may induce complicating diseases that lead to death, and consequently cause death before the tumor is very largely developed. Inflammation will spread upon these organs to their more vital connections and relative organs. Or by interfering with excretion from the bowels or bladder produce disease of the blood, and thus gradually undermine the health of the patient.

After the tumor has arrived at, and greatly distended the abdominal cavity, pressure upon the viscera will sometimes produce disastrous terminations. The stomach is crowded into a very small space, and food can be taken but sparingly, and is often rejected before digestion is completed. The vascular supply of this organ is cramped, and its secretions vitiated and embarrassed, and in this way digestion is interfered with, the appetite destroyed and loathing of food takes its place.

Pressure upon the vena porta embarrasses the secretion of the liver; pressure upon the ductus choledochus, gall-bladder and duodenum, stops the excretion of bile, it is dammed back upon the gland, absorbed and thrown into the blood to poison the nervous centres.

There is no doubt also that the general compression of the organs, by pressure upon the chyle absorbents, prevents that fluid from passing as freely as usual into the blood, and thus by degrees starves the patient. But probably no more disastrous effects of the pressure of the tumor in the abdomen is noticed, than such as is produced through the kidneys. Pressure upon the emulgent veins causes congestion of the kidney tissues, retention of urea, and other matters that should be excreted, and drains off the albumen with the urine, until the blood becomes thinned enough to infiltrate into the cellular tissue generally, in the form of œdema of the extremities, or into the peritoneal cavity, giving rise to ascites. But this is not

the worst mischief, perhaps, caused by the pressure on the kidneys; the poisoning of the blood with urea, and its effect on the nerves and vital organs is too well known to require more than mere mention to suggest the rapidly fatal tendencies which result from it.

Inflammation in any of the important abdominal organs, may be caused by the pressure which will terminate fatally in a greater or less time, owing to its acuteness or slowness of progress. It will be seen by the above description, very short to be sure, that ovarian disease usually terminates by inducing a long train of distressing constitutional symptoms. They are not uniform in different cases, some persons suffering from one mode of complication, and some from another, but nearly all are pretty sure to experience those terrible sufferings, connected with secondary disturbances in the vital organs.

ARTICLE II.

A CASE OF COMPLEX LABOR.

DOUBLE FISSURE OF THE OS UTERI, WITH CICATRICES; RETAINED PLACENTA, WITH HOUR-GLASS CONTRACTIONS.

By CHAS. G. SMITH, M. D., of Chicago, Ill.

Read before the Chicago Medical Society.

On Monday evening, 14th October, I first visited the patient. Having inquired for her previous history, I learned that this was her sixth labor, and that in the previous five, she had never had a living child. The peculiarities of each confinement I could not learn, but only that in the last she had had retained placenta, and crural phlebitis, and was sick a long time. She was now having slight pains, but the membranes had broken, and with every pain came a gush of liquor amnii. On making a vaginal examination, and carrying my fingers as high as possible, I could feel the extremity of a fleshy tumor, in the posterior part of the vagina, but was unable to make out any os uteri. It did not feel like the cord, and there was no pulsation. It did not feel like the placenta,

and there was no hæmorrhage. It was too firm for a polypus, and I was in doubt what it was, and waited for time and the progress of the labor to develop its true nature. On making another visit, late that night, Dr. HEYDOCK accompanied me. There was but little change perceptible, still enough to enable us to perceive the extremities of another body, like the one first mentioned, and immediately anterior to it, but not enough to give any accurate idea of what they were.

On Tuesday, the 15th, I visited the woman morning and evening, but the pains were very slight, and accomplished nothing but to irritate and fatigue the patient.

On Wednesday morning, the 16th, the pains started up quite briskly, and it could now be felt that the tumors described, were the anterior and posterior lips of the os uteri, separated by deep fissures on each side, and enlarged by their own growth, or some tumor attached to their inner surface. Dr. BYFORD saw the patient this noon with me, and detected the head, high above these enlarged growths. As the evening came on, the pains increased more and more, and the internal os could be distinctly made out, with firm cicatrices on each side, and the head pressing down hard on it, without making the slightest dilatation. Late at night, I left the woman quite wearied out, and having occasional and unavailing pains. I gave her some morphine and left directions to be called in the morning, if the pains came on strong and she seemed about to be delivered. I was not summoned, however, till seven o'clock and did not get to the house till half past seven. This was Thursday morning, 17th instant. I found that she had had some few severe pains, and while on her hands and knees, straining a good deal, the child was born, very suddenly and unexpectedly to her attendants, at about six o'clock. It was dead, and gave evidence of having been so for some time. I concluded that the cicatrices alluded to, had, from her great efforts, suddenly ruptured, and, as the vagina was large, allowed the easy passage of the child. On making an examination, I found the pendulous and enlarged lips of the os hanging down the vagina, and that the placenta had not passed from the womb. As it was now, an hour and three

quarters, since the birth of the child, I determined to remove it. With my left hand on the fundus, I passed my right easily into the womb, for about half its length, when I found a strong hour-glass contraction, through which a small segment of the placenta was hanging. I may say here, that I did not distinguish any irregularity of surface from the outside, the abdomen of the patient being large and fat and unfavorable to such an exploration. I pulled gently on the placenta, without accomplishing anything, and then passing my hand gradually through the constriction, found that it was adherent to the walls of the womb, for a space of the size of my hand. I then commenced to take it away as well as I could, but it was so firmly attached, that it would not in any sense peel away from the uterus, and it was only by tearing and breaking through its substance, with my fingers, as gently as possible, and as near to the uterine wall, that I was able to get it away at all. The woman was much exhausted by her long labor of nearly sixty hours, and by the manual interference necessary at its close. She rested quietly, though, during the day, and seemed tolerably comfortable at night.

On making my visit Friday morning, the 18th, she seemed to be doing well, with the exception of a slight febrile movement; she said she was getting along very well and felt much better than she expected. In the evening, however, I was summoned to the house, in great haste, with the message, that while a young girl was sitting by her bedside, and waiting on her, she had got out of her bed twice, and run round the room, and was in fact quite crazy. I found her with a pulse of 130, great heat of surface and delirious. The uterus was enlarged, but not very tender on pressure. Dr. BYFORD was called in consultation, and she was directed to take this powder every four hours :

R—Hydrarg. chlorid. mit., - - - grj.

Opil., - - - - - grss.

Alternately, with five drops of the tr. verat. viride every four hours.

The next morning (19th), I stopped the mercurial and opiate, but continued the veratrum viride through the day, till its

desired effect on the pulse was produced. The uterus was getting large, and the tenderness increasing, and although the heart's action was lessened by the veratrum, there was no change for the better in the head or general symptoms. She was getting into a typhoid state, from the protracted labor, or the absorption of some poisonous material into the blood, or both. The medicines were stopped, and nothing given but wine and water, and beef-tea, with counter-irritation to the extremities. She lived a day and a half after this, passing from a delirious into a comatose state, in which she died. No post-mortem examination was allowed.

The case seems interesting from the peculiar condition of the os uteri. The tumors spoken of, hung down into the vagina, as much like two tongues, as anything I can describe. On each side above them, in the fissures separating the two, were the firm bands of the cicatrization. It is interesting, also, as proving that adherence of the placenta is the cause nearly, if not quite always, of hour-glass contraction, acting like a splint over the muscles of the womb, to prevent their contraction; and that hour-glass contraction is not readily perceptible from the outside.

ARTICLE III.

CASE OF FRACTURE OF THE SKULL.

By O. B. ORMSBY, M. D., Assistant Surgeon 18th Reg't I. V.

Reported for the EXAMINER.

I was called at 12 M. of October 18th, to see Michael B——, Irishman, aged 35, brown hair, blue eyes, and apparently a stout healthy man.

Found him entirely insensible: pupils dilated widely, but equally on either side, pulse 100, small and soft, extremities cold, and breathing so irregular as to warrant description. Each inspiration was accomplished by a series of violent sobs, and was succeeded by an expiration very nearly, or quite normal, in character. After breathing in this manner quite hur-

riedly four or five times, an interval of ten seconds of entire rest succeeded, during which, the patient did not breathe at all. Upon inquiry, I learned that in a street fray, twelve hours previously, he had received a severe blow on the head. The scalp was unbroken, but considerably tumefied, and it was with some difficulty, that fracture and depression of a portion of the left parietal bone was diagnosed. Venesection in both arms was attempted, but meeting with only partial success, no beneficial result was apparent; and as the vital powers of the patient were evidently failing, with the concurrence of Surgeons BURKE, PAINE, DAVIS and STAHL, an operation for his relief was determined upon.

When the scalp corresponding to the apparent seat of injury was exposed by the razor, a purple discoloration was observed extending antero-posteriorly from $2\frac{1}{2}$ to 3 inches, and perhaps $\frac{1}{2}$ inch in width from above downwards, evidently the result of a blow; otherwise, the scalp appeared to be healthy. The operation was commenced by making a crucial incision $2\frac{1}{2}$ inches in length through the integument, aponeurosis of the occipito-frontalis, fascia and cellular tissue to the bone. The flaps were then dissected up, when an examination disclosed a very close fracture running across the space thus exposed, from before backward, with very slight depression of the inferior portion of bone. The trephine was then applied, and a portion of the fracture cut away. A small branch of the temporal artery, which bled so profusely as to impede this part of the operation, was tied.

The trephine used was one of the conical-shaped, made by Ticmann, having the teeth pitched well forward, and was inclined to take too rank a hold on the diploe, but cut the tables very readily. The portion of bone included within the crown was then taken out, disclosing beneath it a clot of dark colored blood lying upon the dura mater. The elevator was applied by Dr. DAVIS, and the depressed bone raised up to its proper level, affording evidently some relief to the patient, whose breathing became somewhat more regular. After waiting a few minutes, all of the clot which could be got at without

undue violence was removed through the opening made by the trephine. The patient was then removed to the hospital of the 18th Regiment, and four drops of ol. tigllii administered per anum, and sinapisms placed upon his abdomen and extremities. The wound was washed with warm water, to encourage oozing of blood, and left open. The patient however soon relapsed into his former condition, gradually sank and died at 9 o'clock P. M., of the same day. Autopsy before the coroner's jury seventeen hours after death: Rigor mortis well marked, body looks healthy, wound resembles a fresh cut. With a view to examine the brain, commenced an incision at the mastoid process of the left temporal bone, carried it through the incision made in trephining directly over the crown, to the corresponding point upon the opposite side, and dissected off the scalp anteriorly and posteriorly, exposing the entire upper and lateral regions of the skull. In this dissection, a considerable quantity of extravasated blood was noticed infiltrating the cellular tissue of the scalp, evidently the result of several bruises. A large fracture was very readily discovered extending from left to right, entirely through the coronal suture, dropping behind it in the middle of the right parietal, but again reaching it before its termination at the squamous suture. Crossing this fracture at right angles was another shorter one, extending from an inch anterior to the coronal suture toward the middle of the inferior border of the left parietal. This fracture was curved, approaching nearer the vertex, in the middle of its course than at either extremity. Three small indentations were observed in the frontal bone, close to the anterior inferior angle of the left parietal, from one of which proceeded a small radiated fracture. Another fracture was discovered commencing at the anterior inferior border of the left parietal, extending upward and backward towards its centre, and dividing near the termination of its course. Another small fracture commenced near the middle of this bone, and extended $1\frac{1}{4}$ inches backward into its body. A fracture half an inch in length passed backwards from the large transverse fracture into the body of the right parietal.

The next step was the removal of the calvarium; upon an examination of the internal table, found it fractured in various directions, corresponding to the fractures of the external table already described. Found also two large discolorations before and to the right of the vertex, produced by effusion of blood into the diploe. Upon the dura mater, covering the right hemisphere, was found a large clot of blood three inches in diameter, one inch in vertical depth in the centre, and weighing seven and one-half ounces. This clot entirely covered the anterior superior portion of the right hemisphere, and encroached to the extent of an inch upon the left. This blood was found to have proceeded from the middle meningeal artery of the right side, which passed through a canal at the anterior inferior angle of the parietal, and at that point was entirely severed. The dura mater was next dissected off; the brain and membranes presented a healthy appearance, no adhesions, no effusion, and the brain presenting only ordinary vascularity. In the walls of the superior longitudinal sinus a small piece of bone $\frac{5}{8}$ of an inch long, and $\frac{1}{8}$ wide was found, but it had evidently been deposited there some time previously. Removing the brain from the skull, found no fracture or disease of the base. Upon examination, the brain was found to be healthy in every part. The skull was of medium thickness, solid, and the sutures well closed. It was alleged upon the witness stand, that this man had received but one blow from a club, and that subsequently he had spoken, and got up and walked a distance of one hundred yards. The principal questions in the legal investigation of this case to be decided, by medical testimony, will be, could one blow have produced the amount and kind of injury here described, and could the subject, afterward, have walked a distance of one hundred yards. The most surprising feature of the case, however, apparent to me, was, that such extensive fractures had been produced without solution of continuity of the scalp. Had the injury been at the base of the skull, it could be readily accounted for, from the fact that fractures of that region are more often produced by falls, where the weight of the body, transmitted through the spinal

column is the immediate cause of the mischief, and the scalp is not necessarily bruised at all; but to injure the vertex, momentum must be applied from without, and to render that momentum effectual, it must be more or less concentrated. If sufficiently diffused, however, to destroy the integrity of the bone so largely, still without injury to the scalp, then the shock to the whole mass of the brain must have been very great, and the consequent concussion correspondingly severe. It is, however, perhaps barely possible, that the man might have walked the specified distance after recovering from the concussion, and before the artery had poured out a sufficient quantity of blood to effectually compress the brain, (for the depression of bone was not nearly great enough to produce so severe symptoms.) But could such an injury, by any possibility, have been produced by a single blow?

ARTICLE IV.

NEW OPERATION FOR OBSTINATE STRABISMUS.

By E. ANDREWS, M. D., Prof. of Surg. in Med. Dep. of Lind University, and Surgeon of Mercy Hospital.

Certain cases of strabismus have always been considered incurable; among which are those which result from rupture of the external rectus oculi muscle, and those which are produced by a wound or injury within the internal angle of the lids, fastening the eye by a cicatrix. Yet there occur instances of this sort where the cure is of the utmost importance. Such are those where the sound eye happens, subsequently, to be ruined, while the strabismic one is so turned inward as to be rendered practically useless for supplying its place. In such case the patient is actually in the condition of a blind man, though having one eye perfect in everything but position. Having two such cases on hand, I resolved to try a new operation on one of them. The external rectus muscle had been ruptured, allowing the cornea to turn toward the internal canthus so far as to be quite out of the reach of vision. Some surgeon had made an ineffectual operation on the old plan

the only result of which was to form a cicatrix, which glued the eye more firmly into its faulty position.

Having administered ether and chloroform, I commenced, as in ordinary operations for strabismus, by cutting the conjunctiva on the inner side of the eye with the scissors; then, with a blunt hook, I picked up successively every band of cicatrix, tendon or fibrous tissue which interfered with the motion, and cut them off with the scissors until the globe could be freely turned outward, by seizing it with forceps and making traction. The eye was thus liberated from the bond, but as there was no external rectus, there was no voluntary power of keeping it to its place. I proceeded therefore as follows: Pinching up the conjunctiva on the outer side of the globe with the rat-tooth forceps, I cut it perpendicularly with the scissors, two lines from the cornea; commencing at the slit thus made, I dissected off the conjunctiva oculi from the slit outward quite to the lining of the lids at the external angle, denuding the inside and edge of the external canthus at the same time. I then took a silver ligature, bent in the form of a staple, and passed the two ends, first through the strip of conjunctiva remaining next to the cornea, and then through between the eye-ball and external canthus, bringing them out through the skin at two points near the external border of the bony orbit. By drawing upon them, I rolled the eye well out, so as to press the cut edge of the conjunctiva against the denuded canthus, and then fastened the wire by a lead button. In this way the eye was secured firmly in a correct position. Some inflammation followed, which was readily held in check by cold water dressings. On the sixth day the suture was taken out, when the eye was found to maintain its correct position, and the operation proved a complete success.

From the results of this experiment, it is obvious that some cases of strabismus which have hitherto been considered incurable, are capable of being rectified, and that this operation may restore useful vision to a class of patients which had been given over to virtual blindness, by the faulty position of the remaining sound eye.

Correspondence.

CONGENITAL MALFORMATION—EXTRACT OF BELLADONNA IN MAMMARY INFLAMMATION.

TO THE EDITORS OF THE CHICAGO MEDICAL EXAMINER.

GENTLEMEN:—On the 24th of September, 1859, I delivered Mrs. Keppell, a German, of a large and healthy female child, at full term. The day following, the mother in great trepidation, remarked to me, “the baby isn’t right, it stools the wrong way! O what will become of it!” Upon an inspection, an anomalous condition of the genitals presented itself, which at the time, struck me as unique, the like of which had never passed under my notice, neither can I find a parallel case on record, so far as my observation extends.

The perineum presented nothing unusual, except that, in place of the anal opening at the posterior termination of the raphe, there was a teat-like prominence occupying the point where the rectum should have terminated. Without disturbing the parts, the entrance to the digestive tube was invisible; but upon separating the labia pudendi, I discovered, anterior to the posterior commissure, occupying the space of the fossa naviculare, a small opening communicating with the rectum, which at first view, I regarded as fistulous, supposing the case to be one of imperforate anus. A close investigation, however, revealed the fact, that the opening was provided with a perfect sphincter, both in appearance and in function—that it was, in truth, the anus!

The external sphincter is perfect in all its characteristics, except that it seems less developed, in size, or more unyielding, inasmuch as its capacity for expansion or distension is considerably less than it should be, presenting in consequence, a greater obstacle or resistance to the passage of the contents of the bowel. So far as can be discovered, with the exception

of this malformation, the child is perfect in all its parts, and is now large and thrifty, showing that the little difficulty attending defecation, does not interfere in any degree, with its welfare and growth.

When about four months old, defecation suddenly became so difficult, that but very small quantities could be discharged, causing the infant great uneasiness; finally the feces were entirely arrested for several days, causing some fever and much suffering, when I was sent for. I found the abdomen large and distended, seemingly to its utmost capacity. Separating the labia majora, and bringing into view the pudendal annus, I discovered a hard smooth substance infringing upon the anus from within, which I suspected to be a pebble; mentioning my suspicions, the mother observed that the child had been playing with pebbles sometime prior to the date of its fretfulness; one of which it must have swallowed, and proving too large for expulsion, it had lodged within the external sphincter, effectually blocking up the passage. I bore against it with a probe, pushing it upward, whereupon the feces passed freely, so long as I held the pebble upon the point of the probe. After a large evacuation, supposing the bowels pretty well emptied, I withdrew the probe, and attempted the introduction of the spoon-shaped end of a grooved director, with a view to engage the pebble in the scoop, that I might remove it. The constriction of the sphincter, however, was so considerable, that its introduction was attended with difficulty, causing the parts to bleed. Failing with the director, I bent a probe, introducing the hooked end into the rectum, but could not engage the pebble, as it would slip upward, in spite of my efforts. In each attempt to get rid of the foreign substance, large quantities of feces would escape. The pebble acted as a perfect valve. I suggested to the mother, that it could only be removed, at that time, by incising the sphincter, to which she objected so strongly, that I did not feel at liberty to press the matter, believing that its presence could do no other harm than to mechanically obstruct the passage, which might be obviated by the repeated use of the probe.

The infant, as may be imagined, was "itself again," after its bowel was relieved of its contents. For a considerable length of time, the mother made frequent use of a probe, for the purpose above mentioned, enabling the child to free its bowel at regular intervals, preventing any fecal accumulation.

Until quite recently, I saw no more of the child, when, upon inquiry, I ascertained that the pebble, that had played such singular freaks, had in all probability been dislodged, as it had not discovered itself for some months. The only difficulty now, seems to be, that unless the stooling is semi-fluid, it is voided with considerable straining.

Growing out of this singular malformation, an interesting question presents itself to my mind. It must be remembered, that the child is purely Teutonic, both father and mother Germans, with large heads and broad shoulders. Should the child mature to womanhood and maternity, more especially if wedded to a German, could she give birth to a child without a laceration of the recto-vaginal wall, involving the anus? Would there not be infinitely greater danger of this accident, than if this malformation did not exist?

Would a laceration—particularly in the first labor, and if in the first, in every subsequent one,—be avoidable?

If the foetus were above the medium size, as might be presumed, for the reasons already stated, would not laceration be inevitable?

ALTHOUGH not pertinent to the foregoing subject, I cannot refrain in this connection, from adding my testimony to the recorded efficacy of the local application of a watery solution of the Ext. Belladonna in mammary inflammation, to which my attention was first directed in 1858, through an English translation, by Prof. W. H. BYFORD, of Chicago, of an article from a German periodical, which appeared in the *North-Western Medical and Surgical Journal*.

In her first and second confinements, Mrs. K. had suffered excruciatingly from abscess of one breast. I was in attendance when confined with her third child. Knowing her liability to inflammation and its fearful consequences, of her "sore

breast," as she called the mamma which had caused her such exceeding agony during each prior confinement, and which had become indurated in consequence, and partly unfitted for lactation, I was very desirous of averting an evil which seemed imminent.

Upon this occasion, she was delivered without any untoward symptoms, early on the morning of September 15th, 1858; on the third day following, she was seized with a severe and prolonged chill, followed by fever. Both breasts were painful and tumid, but the "sore breast" was exceedingly tender and rapidly inflamed. Apprehensive that suppuration was inevitable, I fortunately bethought myself of the translation above referred to; in addition to a cathartic and antimony, I directed the breast to be bathed with a watery solution of the extract, in the proportion of ʒss to the ounce, and the breast afterwards covered with a flannel cloth, moistened with the solution, with orders that the cloth be kept constantly moistened with it. To the great relief of the frightened woman, and my utter astonishment, every vestige of the inflammation disappeared in a few days,—without suppuration, of course.

I am not positive whether she gave suck with her "sore breast," or whether she "dried it up," though I am inclined to the opinion that it secreted a small proportion of milk.

In her last confinement, she escaped without any other trouble than a mild milk-fever, her "sore breast" more sensitive than the other.

Since my first trial of the extract of belladonna, I have had repeated opportunities of confirming my good opinion of this agent. With but one or two exceptions, entire success followed its application.

I might give the details of several cases, wherein its timely use saved them lancings and counter-openings, whilst in prior confinements, they had endured all the tortures of abscess. One case particularly arrests my attention:—

Some fifteen years ago, my sister, then residing in a neighboring village, some twenty miles hence, was confined with her first child. From some cause or other, inflammation and

abscess of both breasts ensued, and, as is too often the case, poulticing was relied on to "bring it to a head." As might be expected, the pus burrowed between the lobes and underneath the integument, seeking exit through a number of openings. Months elapsed before she recovered, with the loss of her child. Using the ordinary means to prevent a similar occurrence during her second, third and fourth confinements, suppuration, more or less extensive, ensued each time. Before the fifth confinement, I had a solution of the extract in readiness, with instructions to apply it freely immediately upon the access of inflammation. The result proved entirely satisfactory; no abscess followed.

Last summer, she was again confined, and threatened with inflamed breasts, but a timely use of the remedy, arrested it speedily.

J. J. LESCHER, M. D.

MOUNT CARMEL, ILLS., Dec., 1861.

IMPROVEMENT UPON THE ADHESIVE-STRAP COUNTER-EXTENSION.

TO THE EDITORS OF THE CHICAGO MEDICAL EXAMINER.

GENTLEMEN:—In the last number of the EXAMINER I gave an account of a new method of counter-extension by means of adhesive-straps in cases of fractured thigh. In that communication, I advised the use of three broad straps of a yard and a half in length; one of them was to be applied along the abdomen and chest, on the afflicted side and parallel to the axis of the body, thence loosely over the shoulder and applied down the back as far as the brim of the pelvis. The second strap was to commence on the sound side between the crest of the ilium and trochanter major, and pass obliquely upward and across the body, over the same shoulder as the previous strap, then diagonally down the back until it returned to the starting point, and crossed the other end above the trochanter. The third strap was to be applied around the waist in the manner of a belt. This dressing was used in the fol-

lowing manner: To the top of a Dessault's, or any other long splint, a bent iron was attached, curving around the bulge of the front of the shoulder, and terminating in a proper hook which was attached to the loose loop of the adhesive-straps where they crossed the top of the shoulder. Adhesive-straps were also used in the ordinary way for the extension. All surgeons know the perfect comfort and ease of the adhesive-strap extension, and the pain, vexation and distress of the perineal band counter-extension. The dressing above described, was found to effect counter-extension without a particle of pain or soreness.

Since penning that communication, I have received a letter from Dr. P. R. Hoy, of Racine, Wis., who allows me to mention the following improvement, made by him in the above treatment.

On trying the method detailed in the *EXAMINER*, one finds two inconveniences. First, the difficulty of raising a patient with a fractured femur so as to apply the straps to the back; and secondly, the softening of the straps on the back by the heat of the body, confined by the bed, so that they gradually slide from their position. Dr. Hoy, therefore, modified the dressing, by cutting the straps full three inches wide and applying them only in front. He also applies three belts, or rather cross straps, which only go half around the body. In this way they are adjusted without moving the patient, and not being heated between the body and the bed, they do not slip. For these reasons, Dr. Hoy claims that his modification of my plan is an improvement, and asserts that in his practice it works admirably.

E. ANDREWS, M. D.

CHICAGO, Jan., 1862.

THE practice of salting the streets of New York, after every snow storm, to hasten the melting of the snow, is now forbidden by law. Great injury resulted from it to persons in the street, and also to horses, in consequence of exposure to the intense cold to the feet produced thereby.

Proceedings of Societies.

CHICAGO MEDICAL SOCIETY—REGULAR MEETING, JANUARY 24TH, 1862.

DISCUSSION ON THE NATURE AND TREATMENT OF CONSTIPATION.

The Society was called to order by the Vice President, Dr. WICKERSHAM. The reading of the minutes and the report of the Sanitary Committee, were deferred until the next meeting. Dr. HOLMES reported two cases, in which bad symptoms appeared from the inhalation of chloroform, but neither of them proved fatal. He also reported a case of extirpation of the eye-ball, on account of a protracted and very painful inflammation, resulting from mechanical injury to the eye. Dr. D. D. WAITE, who had been appointed to read a paper at this meeting, was granted another week of time.

The subject for discussion, namely, *Constipation and its Treatment*, was then taken up:—

Dr. G. PAOLI opened the discussion by stating that habitual constipation was a condition of the alimentary canal of frequent occurrence, and almost always difficult to relieve permanently. He regarded want of action in the muscular coat of the intestine as the essential cause of the constipation; and consequently, that active hydragogue cathartics, such as calomel, castor oil, salts, etc., were not only useless, but often positively injurious. He thought the proper remedies were such as would increase the contractility of the involuntary muscular structures, and thereby render more efficient the natural peristaltic motion of the intestines. His favorite remedy is strychnia dissolved in water, in the proportion of one grain to the ounce, of which he recommends from five to ten drops to be given twice a day.

Dr. HATCH stated that he had met with cases of habitual constipation in this city much less frequently, than in the com-

munity in which he formerly practiced in the State of Vermont. He had met with one species of constipation, frequently in children, and sometimes in adults, accompanied by profuse vomiting of a thin, acrid and sour fluid. It was often accompanied also, by soreness of the mouth. He had pretty uniformly succeeded in relieving this state of the alimentary canal, by dissolving 16 grs. of argenti nitras, and 24 grs. of iodide of potassa, in 4 oz. of water, and giving a teaspoonful after each meal until the vomiting ceased to recur. Then he substituted the use of a cold infusion of *hydrastis canadensis* until the regularity of the bowels was established. This same treatment he had found more effectual in relieving the *nursing sore mouth*, than any other that he had tried.

Dr. WAITE remarked that constipation was a relative term. That many persons passed more than 24 hours habitually without alvine evacuations, and yet appeared to be neither costive nor injured in health. He also alluded to those cases on record, of persons who had passed weeks and months without any intestinal discharges. As a general rule he would regard a patient as constipated, whose evacuations do not occur as often as once in two days. He thinks that in 19 cases out of 20, constipation arises from erroneous habits, refinements in cooking, etc.;—agrees with Liebig, that to ensure regular fecal evacuations, the food must be such as to leave sufficient fecal residue to stimulate the intestines to action. In the treatment of constipation he relies mostly upon the correction of errors in habits, diet, and quality of food, and rarely resorts to medicines. He advises patients to exercise actively, and to live largely upon vegetables and coarse bread, especially that made of unbolted flour. If medicine becomes absolutely necessary, he uses a pill composed of blue mass 2 grs., ipecac 2 grs., and aloes 1 gr., to be given every night until a healthy action is established; but never to produce a cathartic effect. He thinks aloes has a specific action on the rectum, and is consequently contra-indicated when hemorrhoids exist.

Dr. PETERSON thought constipation not a disease, but only a symptom. Hence we must always inquire after the cause,

and apply the remedies to its removal.—If caused by want of action in the muscular coat of the intestines, he would use strychnine or small doses of rhubarb root at bed time. He thinks habitual constipation less frequent here than in Europe.

Dr. HINKLEY, being present as a visitor, remarked that he was in the habit of giving black mustard-seed in doses of a teaspoonful daily, with very satisfactory results. He thinks hemorrhoids exist in a large proportion of the cases of constipation.

Dr. DAVIS, stated that he regarded habitual constipation as a symptom, in the same sense as dropsy or dyspnoea. He regarded the cases occurring in practice as capable of being grouped into three classes, viz: those arising from deficient contractility in the muscular coat of the intestines—those arising from deficient secretory action in the follicles and glands of the intestinal mucous membrane—and those induced by deficient secretion from the liver. The first may be produced by any and all those causes that debilitate the nervons and muscular structures, such as sedentary habits; confined and impure air; insufficient supply of air from confinement of the chest, by bad modes of dress; refusal to attend to the calls for defecation when they exist, etc. The second may arise from any of those causes that are capable of diminishing secretory action, and often exists in connection with the first. The third may arise from any pathological state which prevents the bile from passing into the duodenum. Absence of bile, by no means always induces constipation, but such is generally the result. Of course, in treating constipation, due attention should be given to a removal of all such causes as may have contributed to produce it. The patient should practice going to stool at a given time each day; all errors in dress, diet, and exercise should be corrected. Among the best remedies to restore a healthy peristaltic action, he thinks is the following combination:—

R—Extract. Hyoseyamus, - grs. xxx.
Sulph. Ferri, - - - grs. xxx.
Pulv. Aloe, - - - grs. x.
Extract. Nux Vom., - grs. x.

Mix and divide into 30 pills—one of which may be given before each meal. In the constipation of chlorotic females and anæmic persons generally, he advises the following:—

R—Citrate of Iron, - - - - 3j.

Strychnine, - - - - - grj.

Mix and divide into 30 pills—one of which is to be taken before each meal.

When the constipation arises principally from want of proper secretory action, he has used with much advantage, before each meal, small doses of a solution of sulphate of magnesia acidulated with aromatic sulphuric acid.

Some further remarks were made by Drs. PETERSON, WAITE, and others.

Dr. W. H. BYFORD was appointed to read a paper at the meeting, two weeks from this date.

Hydrocephalus, was chosen as the subject of discussion for the next meeting—and Drs. WAITE and PETERSON to lead the discussion.

Selections.

PER-CHLORIDE OF IRON IN ERYSIPELAS.

Reprinted from *American Journal of Medical Sciences*.

The No. of the *Edinb. Med. Jour.* for July last, contains some interesting remarks by Dr. WM. PIRRIE, Jr., on Erysipelas and its treatment by per-chloride of iron. "As the exact nature of the poison of erysipelas," he observes, "is unknown, we are not in possession of any remedy having the virtues of an antidote. Neither can any single plan of treatment, yet devised, be recommended as equally applicable to all cases, inasmuch as the features of many greatly differ, owing perhaps to the particular diathesis of the subject, or to his state of general health, and the circumstances he was placed in at the time of seizure, or to the peculiar type of the prevailing epidemic. That the last-named circumstance requires

to be carefully weighed in every instance, will at once be readily granted; for one visit to the majority of the cases of erysipelas of the head and face, as now met with, will at once convince us that they are altogether unsuited for the blood-letting and other powerful antiphlogistic remedies which seem to have been so beneficial, according to the records of bygone observers.

On the other hand, that the excessive stimulation so strongly advocated by some, for every case of the disease in question, is not an indispensable remedial agency for successful treatment in most instances, may, I humbly think, be reasonably inferred from the multitudes of recoveries which have taken place under a more moderate use of stimulants.

The conviction that erysipelas generally tends to a spontaneous recovery is by no means incompatible with holding the belief, that much may be done by suitable treatment to check the intensity of the disease, to alleviate or remove many of its most distressing symptoms, to maintain the vital powers, to moderate inflammatory action, and to assist the natural efforts at cure, and thus more surely conduct the disease to a favorable termination. Examples of the disease often occur, which from the first present a very unfavorable aspect, yet issue in recovery. Such recovery we may justly ascribe to the line of treatment pursued. It is, therefore, the duty of every one to place on record any plan of treatment which he thinks has been attended with success, and allow it to get a fair trial in the hands of others; to state fairly the effects which appeared to him to follow the employment of any particular remedy, in what respects it modified the intensity of the disease, and what symptoms it alleviated or controlled; without trying to deny that much is done for recovery in this disorder by the spontaneous operations of nature. It has always appeared to me, that in a careful study of this, as well as other diseases, we discover certain landmarks or beacons, as it were, to guide us to the adoption of a scientific and rational method of treatment. We find, for example, that the disease cannot be cut short by any known agency, that it must run a definite course, that it early produces a most depressing effect on the system, that there are symptoms more particularly distressing than others to the sufferer, and that in due time nature employs a machinery of her own for the removal of the noxious matter from the system.

The great indications of treatment then, suggested by a consideration of these points, are—to uphold the powers of the system, to ameliorate or control the most distressing symp-

toms, to obviate the tendency to death, and to assist, if possible, the natural efforts at cure.

The first indication is to be fulfilled by removing as speedily as possible any existing internal sources of irritation, by correcting any hepatic or alvine disorder, by rigidly enforcing thorough ventilation, with due regard to the maintenance of an equable temperature and guarding against exposure to currents, and by giving some medicine or remedies capable of imparting tone to the system and of upholding the vital powers. A marked feature of the disease, as already mentioned, is early depression of the various parts of the organism—the energy of the nervous system becoming rapidly exhausted—the vigor of the muscular system being speedily impaired—the tone of the vascular system lowered—the capillaries relaxed, and serous effusions quickly ensuing. I was induced, by the high terms in which many have written in favor of the muriated tincture of iron, recommended by Dr. Hamilton Bell, for the treatment of erysipelas, to try what effect the per-chloride of iron might have on the disease. Having given it a fair trial in five successive cases, I will simply state the effects which I observed to follow, in the hope that others may give it a trial, and thus an opportunity be obtained of comparing the effects produced in different cases, and the means be acquired of arriving at some definite understanding as to its value in the generality of cases. In all the cases in which I used it, a decidedly beneficial effect seemed to be produced. The febrile condition seemed in all to be relieved, the frequency of the pulse reduced, the powers of the system generally upheld, and the stomach and bowels in no way irritated. Two circumstances I would particularly notice with regard to the per-chloride in the cases in which I tried it. One, which I carefully noticed was, that its use seemed in no way to be contraindicated by headache and sensorial disturbance; instead of increasing, it seemed to diminish these unpromising symptoms. The other circumstance to which I would particularly direct attention is, that in the above cases the serous effusion was, throughout the entire course of the disease, less copious, and also disappeared much more quickly, than in the generality of equally grave examples which I had previously seen.

Two persons, who had a very severe attack, stated to me spontaneously, without my directing their attention in any way to the subject, that they very speedily felt a most decided general benefit from its use; and the others, on inquiry, said they ‘felt it keep down the fever’ and speedily diminish the ‘tightness’ of their faces.

The taste of the per-chloride is to some very unpleasant, but it may be quickly removed by thoroughly washing out the mouth with water immediately after taking the solution. Special attention ought to be paid during its employment, to act on the bowels from time to time by some very mild laxative. What its specific mode of action is, I do not pretend exactly to know. Perhaps it may act beneficially, in virtue of powerful tonic properties, or its therapeutic value may reside in some peculiar influence it exerts on the blood, in consequence of its powerful disinfectant properties, or in its imparting tone to the capillary system, and counteracting the general relaxation of the capillary vessels. In the cases in which I used the medicine, I ordered it to be taken in quantities varying from fifteen to twenty drops every two and a half or three hours, according to the peculiarities of each case. This was persevered with till convalescence was fairly established, after which the iron was greatly redneed, and drachm and a half, or two drachm doses of liquor ammoniæ acetatis ordered to be taken three or four times a day at proper intervals. The liquor ammoniæ acetatis acts very beneficially in the convalescent stage, by being a very gentle stimulant to the nervous and vascular systems, a mild diaphoretic, and an unirritating diuretic; and thus, by gently stimulating the functions of the skin and kidneys, it fulfils the last-named indication of treatment. In the course of any attack of erysipelas, just as in all fevers, the lowering effect of the disease may become so great, and the tendency to death, from failure of the vital powers, so strongly marked, as imperatively to call for the use of powerful stimulants. The employment of these agents, in this and in all diseases, to be beneficial, requires the greatest prudence and judgment in their selection and apportionment, and the most careful watching of the effects they produce. The exact form of stimulant, whether wine, brandy, or other spirit, must be determined by the particular situation of each individual case, and the previous habits of the patient.

The delirium and coma, which so often accompany erysipelas, are, according to general consent, the result of diminution or arrest of the cerebral energy, caused by mal-nutrition of the brain substance, and to be treated most successfully by the cautious use of stimulants. Cases, however, may occur in which some of the symptoms of genuine phrenitis appear, and then it might be judicious to employ some form of local depletion,

The bronchitis attacks are to be treated by mustard cata-

plasms, blisters, or turpentine stupes to the chest; but the two latter I have once or twice seen irritate the renal organs very much in this disease. Should the attack supervene when the system is very low, stimulants must be given; but if during the period of convalescence, some simple stimulating expectorant, in addition to the counter-irritation, generally suffices for cure. If symptoms of œdematous effusion into the submucous tissue of the glottis and epiglottis arise, the speedy performance of tracheotomy affords almost the only chance of saving life. Of all local applications, perhaps the most serviceable and least objectionable, under all states of the skin, are flannels wrung out of hot water. This application, no doubt, is open to the objection of requiring almost constant attention, and of occasioning considerable trouble for its proper employment; but its advantages in many respects over unguents, dry powders, or other appliances, more than compensate for these slight drawbacks. When proper precautions are taken to maintain a uniform heat, by frequent renewal of the flannels, the application possesses the great advantages of being cleanly, generally agreeable to the feelings of the sufferer, unirritating to the skin, calculated to prevent any repression of the external inflammation, and not forming, as unguents and powders do, with any exudation which may have taken place, the scabs and crusts which become sources of great local irritation, and general discomfort to the invalid.

PYÆMIA AND HOSPITAL GANGRENE.

By Prof. JUNGKEN, of Berlin.

Reprinted from *Med. Times and Gazette*.

These diseases are more easily prevented than cured. For prevention, it is necessary that the most scrupulous cleanliness should be rigorously carried out in the treatment of the wounded, and, where many patients with ulcerations are congregated in rooms, thorough ventilation should be attended to. Where the surgeon has the choice, he should object to the reception of a large number of wounded persons in one common ward, as this is only too often the cause of pyæmia and hospital gangrene. Where there are no other contrivances for ventilation, the doors and windows should be opened, even if the patients complain of cold. The patients should also be frequently bathed. If the wounds are severe and the suppuration considerable, the perpetual bath is very useful for pre-

venting these diseases; but the water should be often changed so that it does not become impregnated with the pus. Local baths, where they can be had, are also very useful; otherwise, a half or a whole bath ought to be given. Concerning local baths, Prof. Jungken condemns such tubs as are furnished with caoutchouc rings, through which the limbs are put, as, in order to prevent the water from flowing out of the tub, the caoutchouc ring must fit the limb so closely that the veins thereby become compressed, and thus a free circulation is impeded and mortification induced. If the bath is to be useful to the patient, the limb must rest in the water quite free and without any troublesome pressure. Fumigations with chlorine or vinegar are only feeble palliative means, which may be applied where no fresh and pure air is to be had. If fumigations must be made, those recommended by Guyton with chlorine are preferable to those with vinegar; but they never purify the air of sick-rooms so thoroughly as is done by fresh air, and in many patients they produce troublesome symptoms on the part of the respiratory organs.

As wars are generally undertaken in the warm, fine seasons, these being favorable to the movements of large armies, it is just at this season that great numbers of wounded have to be treated. The locality of great battles being dependent upon accidents which cannot be foreseen, the surgeon generally finds himself under the necessity to provide accommodation for the wounded in rooms not at all suitable for the purpose. In order, therefore, to prevent pyæmia and hospital gangrene under such circumstance, the surgeon ought to prescribe the air-bath, that is, to order the wounded to be placed in the open air under linen tents.

Delpech, the great French surgeon, did not recommend the air-bath so strongly as Brugmanns, who was the first to employ it; but he erred in employing the air-bath alone, without other remedies, for the cure of hospital gangrene. According to Professor Jungken, there is no specific remedy for this obstinate and dangerous affection, which could, exclusive of all others, effect a complete cure. Not even the actual cautery is able to do this, although it is the most powerful of all remedies offered to us for combating this affection; but even if we cauterize a gangrenous wound as deeply as possible, and the patient is still left in a contaminated atmosphere, the ulcer will again present a gangrenous aspect as soon as the eschar has come away.

The air-bath is just as important in pyæmia as it is in hospital gangrene, especially if it is possible to place the patient

under trees in full leaf, the exhalations of which are known to have a beneficial effect. In many desperate cases of pyæmia and nosocomial gangrene, where every means had been employed in vain, and the patients seemed past hope, an immediate change for the better was perceived after Prof. Jungken had ordered them to be taken out of the surgical wards of the Charité Hospital, into the gardens adjoining this institution, where they were placed on a simple couch, covered with a blanket, and left in the open air for the rest of the day. Other remedies which had until then been employed in vain now took effect, and the Professor thus succeeded in saving wounded persons who must otherwise have certainly perished.

Professor Jungken found a striking confirmation of these views during the revolution in Dresden, when many a sanguinary struggle took place between the insurgents and the soldiers. Many of those wounded on this occasion were brought into the palace belonging to Count Marcolini, in which the saloons are furnished with very large windows, reaching to the bottom, and which looked upon a beautiful garden filled with splendid old lime-trees. Whenever the weather permitted, those most dangerously wounded were carried on their beds into the garden, and spent the whole day under the trees. The results were strikingly favorable. It is, after all, better that the patient should shiver a little in a cold but pure air, than that he should die in a warm but poisoned atmosphere.

It is also of great importance to prevent any intercourse between those affected with hospital gangrene and others. The bandages and instruments which have been employed for gangrenous wounds ought not, if possible, to be employed a second time, as the severity of the sufferings is thereby increased in those already affected, and others may receive the contagion in this way. Bandages, linen, or clothing, etc., should not be kept in rooms where patients so infected lie, neither should lint, etc., be prepared there. A frequent change of the bedding, blankets and linen of such patients is also of the greatest utility.

Among the large number of local remedies which have from time to time been recommended for hospital gangrene, the more effective are per-chloride of iron, the acidum pyrolignosum, chloride of lime, hydrochloric acid, carbon powder with chloride of zinc, myrrh and camphor (R. Carb. lign. pulv. ʒj; myrrh ʒj; camph. ras. ʒss.; zinc. chlo. grs. v. in f. pulv.), and chloride of zinc in solution. Of all the other remedies little or nothing is to be expected. But the medicines just mentioned have not the same effect at all times. There are

periods in which chloride of lime is particularly effective, and when no other remedial agents will answer the purpose; at other periods chloride of lime entirely fails, and carbon powder or acidum-pyro-lignosum produce good results, so that it is probable that, in spite of the similarity and even apparent identity of symptoms observed, there must be some peculiar differences in the several epidemics of hospital gangrene, which are at present only to be recognized by the success and failure of certain remedies.

There is only one remedy for this terrible disease, which never fails the surgeon, provided it is properly used, and that the other circumstances, such as light, air, etc., are favorable: this is the actual cautery, which has of late been unjustifiably neglected, but is believed by Prof. Jungken to be the only certain and reliable means for destroying the peculiar and dangerous contagion of hospital gangrene. To neglect the actual cautery under such circumstances, is not only to do harm to the infected patients, but also to those not yet attacked, as the contagion will then no doubt spread further, and become more dangerous. The surgeon ought to be the readier to employ the actual cautery, as the patient may be put under the influence of chloroform, and thus be spared much suffering during the operation. To render this effective, the iron must be brought to white incandescence, in order that the most intense heat may be applied to the gangrenous surface; otherwise the operation is useless. It must also be applied at an early period—if possible, at the commencement of the epidemic—in order to destroy the evil in the germ. If, however, the gangrene has become strongly developed, the whole surface of the wound must, previous to the cauterization, be laid bare, sinuities and canals must be carefully divided, larger mortified parts must be removed by means of the scissors or the knife, the surface must be cleaned of all detritus, and dried by lint or sponges, so that the cautery may act upon a clean and dry surface. It must be applied especially to the edges of the ulcer, and beyond the diseased parts, in order to produce plastic re-action. Afterwards the patient must not remain in the room in which he was before; but he ought to be transferred either into the open air or in a single room, where doors and windows are open by night and day; and the bed ought to stand as close as possible to the window, even during the night, and whether the season be rough or not. The elimination of the eschars ought to be left to nature, and should not be promoted by warm fomentations or cataplasms, which relax the parts and thus favor relapses. The eschars will then come

off a little later, but we have, on the other hand, the advantage of a strong re-action, a better suppuration and formation of granulations. Gentle irritants should afterwards be applied to the surface of the ulcer.

The local applications ought to be accompanied with a suitable dietetic and pharmaceutical treatment. The strength of the patient must be kept up, and no mercury be given, the bowels being kept open by mild aperients. By strictly adhering to these rules, Prof. Jungken has for a number of years succeeded in keeping the surgical wards of the Charitè Hospital, which were formerly a hot-bed of hospital gangrene, free from this terrible scourge.

UTERINE HÆMATOCELE.

Reprinted from WEST on the *Diseases of Women*.

Within the past few years attention has been directed, chiefly by French writers, to cases in which *tumors have been formed* in the immediate vicinity of the uterus *by the effusion of blood* either into the cellular tissue around the womb, or into the peritoneal cavity in the *cul-de-sac* between the uterus and rectum. In both instances the hemorrhage is generally associated with some previous disorder of the menstrual function, often with its temporary suppression; the congestion of the sexual organs relieving itself by a profuse outpouring of blood, for which effusions the name of *uterine, retro-uterine, or peré-uterine hæmatocele* has been proposed.

When the hemorrhage takes place into the peritoneal cavity, its source has probably in the first instance been the lining membrane of the uterus itself and the Fallopian tubes, whence escaping at their fimbriated extremities it collects in the *cul-de-sac* behind the uterus. In one post-mortem examination this process was seen in actual course of occurrence, both tubes being distended with blood, and a partially decolorized coagulum hanging from the extremity of one of them. The blood thus poured out speedily excites inflammation, and adhesions forming between the adjacent coils of intestines shut it out from the cavity of the abdomen. It here undergoes within the artificial cyst that encloses it, the same changes as are incidental to sanguineous effusions elsewhere. Sometimes the blood is altogether removed by absorption, and adhesions between the uterus and adjacent viscera remain the

only evidence of the bygone mischief. At other times an aperture of communication forms with the rectum, or more rarely with the vagina, and the decomposed blood is expelled, the patient either altogether recovering, or the sac remaining a pus-secreting surface, and pelvic abscess succeeding to the hæmatocele, as in a case which came under my own observation. In cases which have a fatal issue this is due either to the recurrence of hemorrhage exhausting the patient, or more commonly to the irritation extending beyond its original seat, and at length involving the whole of the peritoneum in a general inflammation. In two out of eight post-mortem examinations of which I have found a record, the hemorrhage seemed to have been furnished entirely from the uterus and Fallopian tubes; in one the vessels of the ovaries had given way under a more than usually intense congestion of those organs. In one it appeared to have had a two-fold source, being derived in part from the tubes, in part from the vessels of the broad ligament, into the tissues of which blood was effused. In two of the remaining four cases the blood was poured out behind the uterus but beneath the peritoneum; in one beneath the peritoneum in the iliac fossa, and in the fourth between the folds of the broad ligament.

We learn, then, from these observations the existence of a previously unknown hazard attendant on disorders of the sexual system in women: that not merely may intense congestion lead to profuse and dangerous floodings, or functional disturbance issue in inflammation of parts in the vicinity of the uterus, but also that vessels may give way, and hemorrhage take place inwardly, in situations where it is hard to discover, and still harder to suppress. As might be expected, the accident is one which takes place only during the period of sexual vigor, it having occurred in 21 women at the following ages:—

	Under	20	in	2
Between	20	and	25	“ 2
“	25	“	30	“ 7
“	30	“	35	“ 5
“	35	“	40	“ 4
At	40	“		1

 21

Of the above 21 patients 15 were married, 3 were single, and the civil state of the other 3 is not mentioned.

The affection has scarcely been observed often enough or with sufficient minuteness to allow of its features being

sketched with complete exactness, though in all the cases of it there is a sort of general family likeness which I think would enable the attentive observer usually to recognize it, or which at least would arouse his suspicions as to its possible character. Of the four cases that came under my own notice, one was that of an unmarried woman, aged twenty-two, who having long suffered from attacks of pain of a paroxysmal character in the left iliac region, was surprised at the age of nineteen by a profuse discharge of a dirty reddish brown color from the vagina, which continued in varying quantity for many weeks, and was then succeeded by a puriform discharge occurring in gushes, which continued down to the time of her coming under my care. A tumor in the iliac region, and another felt behind the uterus fixing that organ in its place, were the evidences of some bygone inflammation; of an old pelvic abscess in short, the origin of which, in an effusion of blood was rather inferred from the patient's previous history than actually demonstrated. Puncture of the abscess and the injection of a solution of iodine into its cavity were followed by its complete cure. In the other cases the accident was of recent occurrence, and its symptoms were sufficiently characteristic to remove all doubts as to its nature. The patients were married women of the respective ages of 33, 24 and 25 years. In the first, exertion on the second day after miscarriage at the sixth week was followed by great increase of the sanguineous discharge, which continued for twelve weeks. At the end of this time a vaginal examination detected a tumor behind the uterus of the size of an apple. On being punctured it gave issue to a reddish-brown discharge, the continuance of which for three weeks was followed by the complete disappearance of the swelling. In the second patient, who for five years had lived in sterile marriage, the symptoms gradually developed themselves during the persistence for two months of a discharge, supposed to be menstrual. Here, too, a tumor behind the womb gave issue, when punctured, to a black offensive discharge, which evidently consisted of decomposed blood, and the patient having surmounted an attack of peritonitis perfectly recovered. The third case so well illustrates the symptoms and the dangers of the affection, that it seems to me deserving of relation somewhat in detail.

A tall, stout, and tolerably healthy-looking woman, twenty-five years old, who had been married for seven years, had been pregnant four times, and had given birth to three living children, of whom the youngest was twelve months old, was admitted into St. Bartholomew's Hospital on February 22d,

1851. Her general health had been good, her labors had been natural, and after all of them she had menstruated regularly during the whole period of lactation. After her third labor matters went on as usual until Christmas, when she menstruated naturally, but ever since that time a sanguineous discharge, neither very profuse nor intermingled with coagula, had been constantly present. For a month she had had pain of a bearing-down character, aggravated by exertion, but not notably relieved by rest, nor by any particular position; and she had also for the same time suffered from occasional fainting fits. Micturition was frequent and painful, and her urine was reported to be both scanty and high-colored. A medical man whom she had consulted told her that "her womb was down."

The abdomen was large and somewhat tense, its enlargement being due to the presence of a tumor, the surface of which was slightly uneven, occupying the whole of the left side, extending three inches above the umbilicus, reaching about three inches across the mesial line, though gradually sloping downwards, so that on the right side its upper margin was an inch and a half below the umbilicus. The tumor was firm, non-fluctuating, very tender to the touch, especially in the left iliac region.

The finger on being introduced into the vagina came almost immediately on a somewhat firm, elastic tumor, of an oval shape, of about the thickness of the wrist, and which had pushed before it the posterior vaginal wall. This tumor seemed to pass over into the substance of the uterus, about half an inch behind its orifice, the whole organ being so misplaced that the os uteri was felt lying horizontally immediately behind the symphysis pubis. The finger passed up in the front and right side of the pelvis without encountering any resistance; but at the left side and posterior part of the pelvis a firm tumor was felt apparently continuous with that immediately behind the uterus. The vessels of the tumor pulsated very forcibly.

About three ounces of a bloody fluid were drawn off on the tumor being punctured with a grooved needle through the vagina. The microscope discovered nothing but blood-corpuscles in the fluid, and with the view of emptying the tumor if possible, and of thereby relieving the painful pressure on the rectum, which occasioned much distress, a Ponteau's trocar and canula were introduced, but only about four ounces of fluid of the same character as before were let out. The

tumor was not much thereby diminished in size, nor was the patient's discomfort much alleviated. On February 27th, no fresh interference having been resorted to, she was seized with peritonitis, during the course of which there was manifest increase of the tumor, which extended more towards the right side of her abdomen. By the 3d of March all active symptoms were subdued, and on that day the patient passed two copious evacuations, which were perfectly black, and apparently consisted entirely of altered blood. The same afternoon, too, she experienced a sensation as of something giving way internally, and this was immediately followed by an abundant gush, from the vagina, of very fetid fluid, resembling coffee-grounds in appearance. This fluid flowed at first very abundantly, afterwards more scantily till morning, when it ceased, though another gush of it took place on the following day, and afterwards recurred occasionally for several days, acquiring by degrees a lighter color, and becoming at last a dirty sero-purulent matter. Very slowly the patient's general health improved, while at the same time her abdomen diminished in size, and having measured forty-six inches on her admission had shrunk to forty inches on March 25th. The tumor in the left hypogastric region at the same time manifestly diminished in size and became more mesial in its position; and on April 5th the uterus had nearly regained its natural situation; there was no longer any distinct tumor behind it, but a hard, semi-cartilaginous thickening, ill-defined as to its extent and relations. On April 17th all discharge from the vagina finally ceased, and on May 5th all trace of abdominal tumor has completely disappeared, the position of the uterus was quite natural, the thickening behind it was much lessened. A year afterwards I again saw the woman; she was in perfect health, menstruating regularly; there was no trace of abdominal tumor, the uterus was perfectly movable, and there was scarcely any thickening to be felt behind it, or to its left side.

In its main features this case corresponds very closely with the description of uterine hæmatocele given by M. Nélaton and others. Though some form of the disorder of the menstrual flux usually precedes the attack, the suppression of the discharge does not seem to be so constant as might, on theoretical grounds, have been anticipated; for sometimes irregularity has been observed both in its return and in the quantity of blood lost; at other times actual menorrhagia, and at others again a flow of blood, not alarming in its quantity, but at

length causing anxiety by its continuance.* In most cases, too, even though the menses had been previously suppressed, a somewhat profuse flow of blood, sometimes for a few days, sometimes for a few weeks, precedes the actual occurrence of the internal hemorrhage; but the development of the acute symptoms generally follows a temporary diminution or cessation of the sanguineous discharge. The acute symptoms scarcely ever appear till after the sanguineous discharge has either ceased completely, or has become much diminished in quantity. The symptoms are those of general febrile disturbance, seldom, however, very severe, accompanied by abdominal pain, and usually by enlargement of the abdomen. Even of their own accord, these febrile symptoms usually subside, and the pain also diminishes; a sense of weight in the pelvis, bearing down, difficult micturition, and still more difficult defecation remaining behind, and leading by the distress which they occasion to a vaginal examination, and to the discovery of the pelvic tumor.

When matters have reached this stage, the subsequent progress of the case seems to depend on circumstances. Puncture of the tumor may be followed by the complete evacuation of its contents, and the rapid recovery of the patient; or an expectant mode of treatment may be succeeded by the slow absorption of the blood, and by gradual convalescence. But events may follow a different course, and one far less auspicious: peritonitis may come on as the result perhaps of some fresh effusion of blood, or in the course of nature's efforts to eliminate it; and this peritonitis occurring in a patient already weakened by the hemorrhages may prove fatal. Or, after more or less suffering, the blood may find a passage by the bowel, or by the vagina, or as in the case just related, by both at once; and with its discharge the swelling may disappear, and the patient eventually regain perfect health; her whole illness having extended over a period of from two months to six or seven.

(To be Continued.)

INFANT MORTALITY IN IRELAND.—Despite legislative enactments favoring the poorer classes, notwithstanding the absence of famine or pestilence, the population of Ireland has decreased by 787,842 souls, which amounts to a proportion of 12.02 per cent. in the decade of years.—*Lancet*.

* In 13 out of 26 cases, suppression of the menses, or the irregularity of their return, which was postponed beyond its proper time, preceded the development of the symptoms of the effusion: in 6, on the contrary, there was menorrhagia, or a constant sanguineous flow, and in one instance abortion was followed for two months by constant, though not profuse hemorrhage. In six of the cases, or in rather less than a fourth, pain preceded the acute symptoms, but neither suppression of the menses nor any other form of menstrual disorder.

NATURE IN THE CURE OF DISEASE.

Reprinted from the *Boston Med. and Surgical Journal*.

The fashion, that is somewhat prevalent at the present time, of decrying the use of drugs in the treatment of disease, and which arises partly from a skepticism characteristic of our days, and probably in some degree from a species of indolence which readily finds an excuse for getting rid of a study, to many an unwelcome task, is well commented upon in the following extract from an article in a recent number of the *London Medical Times and Gazette*, which we would commend to our readers as containing much sound sense:—

“Another insidious and plausible mode of discountenancing the use of drugs is to represent them as ‘unnatural,’ and to speak of ‘Nature and Art in the cure of disease,’ as if there were some antagonism between them, and as if the use of drugs were artificial, and, if so, reprehensible.

“Just as one portion of popular error arises from ignorance of facts, so does another and more inveterate set of errors arise from confusion in the use of words. ‘Nature,’ for example, is a word that is incessantly quoted. It is ‘natural,’ we are told, to wear the beard; ‘natural’ to drink when thirsty; ‘natural’ for mothers to suckle their infants; and, as the authors of twopenny treatises, and lecturers on diet never fail to tell us, it is ‘natural’ to eat brown bread. Popular books on medicine are rich in this sort of practical joke, if we may call anything a joke that destroys human life, for we hold that bad logic destroys more lives than gunpowder. For example: one of the popular books on medicine which we reviewed lately (and by no means the worst of them) contained a story such as this:—‘A monthly nurse once asked me, if she should give some gruel to a newly-born infant. I replied, “Now don’t you think, nurse, that if *Nature had intended* it to have gruel, the child would have been born with a bottle of gruel round its neck?”’ This poor woman was vanquished by this precious piece of argument; yet she might fairly have asked, in return, had Nature intended the cord to be divided; had she meant the child to be washed and dressed, and whether scissors, thread, hot water, soap, sponge, violet-powder, and cambric chemisettes might not have been objected to on the ground of unnaturalness, quite as much as gruel. The fact is, that the word *Nature* is used to signify at least two independent ideas. One is that brute, naked state in which any given thing happens to be found without interference or improvement by the hand of man: *state of Nature* as it is

called. The other meaning includes the whole faculties and capabilities, including the circumstances favorable to full and luxuriant growth and development. Thus, man in a state of Nature (to use the word in one sense) is a filthy, stinking, verminous savage, thoroughly selfish and utterly deficient in those finer feelings of love for parents and children which we, educated under the influence of Christianity, are wont to call 'natural affections.' But the nature of man (to use the word in the other sense), includes the possession of conscience and reason, which teach him to check mere brutal instincts, and prompt him to explore, subdue and utilize all the objects he meets with, and to employ them in such a way as to produce for himself the greatest amount of beauty, comfort, health and strength. Hence to denounce or sneer at, as *unnatural*, the use of drugs, which man's instincts prompt him to seek, and his intellect enables him to find, is a monstrous and most mischievous perversity. But so it is. A patient in a well-built house, in a comfortable bed, fed with food and clothed with textures from all the quarters of the globe, and dependent for his comforts, and even his life, on the accumulated products of centuries of human art, is supposed to be treated *naturally* if he takes no medicine: the case is 'left to Nature;' but if any of those beneficent means be used which have also been slowly gathered together during the progress of human civilization—leeches, for example, to take a little blood where it is superfluous; anodynes to procure sleep, or aperients to empty the bowels—forsooth this is unnatural and artificial! and therefore suspicious, if not positively wrong.

"Let us say, emphatically, to administer drugs out of mere routine is contemptible. To give unnecessary medicines for the sake of adding to professional profit is degrading. The rash and blindfold heroic practice of giving active remedies in all cases (whether bleeding or brandy), is dangerous. To neglect air, food and regimen, is to let half our weapons lie idle. But we do desire most earnestly to vindicate and uphold the rational and temperate use of those drugs which are employed in ordinary practice; because they can produce effects quickly, which cannot be obtained quickly from rest, diet, or other appliances, and because human suffering may be enormously mitigated by them. Whilst we get rid of the old apothecary traditions, let us avoid that half-indolent, half-skeptical spirit that would rob us of some of our most valuable instruments, and encourage the public in prejudices that have been but too successfully instilled by our adversaries. Let us study the practical art of healing, and the uses of drugs especially, for, in the words of the author of Ecclesiasticus, 'He that is wise will not despise them.'"

A NEW METHOD OF TREATING DRY LABORS.

(To the Editor of the *American Medical Times*.)

SIR:—I am induced to offer the following consideration to the profession, on account of the success attending the practice, as well as the favorable opinion of some of the leading members in the profession in your city, with whom I have conversed on the subject. They have very kindly urged me to communicate my *simple and practical method of preparing pregnant females for the operation of turning the fœtus in utero*, in the highly annoying and dangerous cases of dry birth, with irritation, great sensibility and contraction of the uterus over the fœtus, in shoulder or other mal-presentations.

It will be admitted by those who have had a full share of experience in the treatment of difficult labors, that on many occasions we have to *encounter the greatest difficulty in effecting the introduction of the hand into the uterus to the required distance for reaching the feet*, for the performance of the operation of turning. Churchill, in his chapter on podalic version, corroborates this statement:—"On the other hand its disadvantages are not to be overlooked. From the *distance the head has to traverse, and the difficulty of seizing the feet*, and of turning the child in utero, there must ever be a fearful risk of injury to the mother." Upon an inspection of the tabular views given by Lee, we find that out of seventy-one cases of shoulder presentations, in which turning by the feet was resorted to, "seven women died from *rupture*, and three from *inflammation* of the uterus." "*Laceration and inflammation* of the uterus are, therefore, the consequences chiefly to be dreaded."

The *reaching of the feet* is usually deemed a difficult step in the operation, owing to the *contraction* of the uterus over the fœtus, while the *irritability and dryness* of this organ impede and endanger the act of turning itself. To mitigate the perilous consequences of the just-named artificial interference, I have adopted the following plan, viz: Previous to turning, I place the patient on her back, side, or on her elbows and knees, as the case suggests, the better to enable me to introduce into the os tincæ two or three fingers to reach the child; with these I endeavor to carry between the head and shoulder of the fœtus, if it is a shoulder presentation, (or near any other convenient part, according to the mal-position), a large

elastic catheter, whose orifice and pointed end is filled to the length of one inch with clean lard, which is kept at a low temperature; the mouth-piece of the catheter being attached to an elastic tubing connected with a stop-cock, and an elastic Davidson, or other forcing pump. Before connecting the catheter with the pump, I fill the catheter with sweet oil, at blood temperature, and lock the cock to keep the air out. I endeavored now to introduce the catheter, as heretofore remarked, as high up as practicable, into the cavity of the uterus; better, if feasible, between the ovum and the inner walls of the uterus, but *always opposite to the attachment of the placenta*. Having reached with the point of the catheter the required height, I connect the catheter with the pump, filled with oil at the above-mentioned temperature, the free end of the pump being immersed in a vessel containing oil kept at the same temperature. Now I inject with a small degree of force, in the interval of pains, from one pint to a quart or more of oil. Between the injections I direct the patient to change her position from back to side, or elbow and knees, or vice versa, even to sitting or walking. On one occasion, where I could not procure oil, I used the white of eggs. From this simple operation, I have noticed the most pleasant results, namely: I have seen patients who were for twenty-four and more hours in intense suffering, in a comparatively short time calming down, with contractions of the uterus less annoying, the uterus becoming more pliable to the introduction of the hand, for the operation of turning. Now there was no great difficulty experienced, and the employment of force was not required. Nay, I succeeded, even after such a preparation, in changing a mal-position into a normal position, by the combined method of internal and external manipulation, *without introducing the hand into the cavity of the uterus*.

Cases of some interest, in connection with this mode of preparing for turning, I shall report in my fasciculus on operative and therapeutic midwifery. The patients so treated had less symptoms of nervous shock, and showed far less the consequences of the dreaded operation, consequently the recovery was more speedy. Possibly a more extensive trial by other surgeons of this mode of preparing the patients for turning, may confirm my experience so far in the treatment of these annoying and obstinate cases, the result of which I would thankfully receive from any gentleman who would inform me.

Yours, etc., J. LANGER, M. D.

DAVENPORT, Iowa.

Book Notices.

THE PLACENTA, THE ORGANIC NERVOUS SYSTEM, THE BLOOD, THE OXYGEN, AND THE ANIMAL NERVOUS SYSTEM, PHYSIOLOGICALLY EXAMINED. — By JOHN O'REILLY, M. D., Licentiate and Fellow of the Royal College of Surgeons in Ireland, Resident Fellow of the New York Academy of Medicine, etc., etc. New York: S. S. & W. Wood, 389 Broadway. 1861.

The several papers, of which this volume is composed, have been, heretofore, noticed in our pages, and have attracted a considerable share of the attention of the profession; not less from their unique literary composition and arrangement, than from the intrinsic merit and originality of the views therein presented. The subjects treated of, possess an absorbing interest and importance to the physiologist; and, although the propositions Dr. O'REILLY offers, are startling in their novelty and boldness, he has presented such an array of facts and authorities, has evidently expended so vast an amount of research and thought, that they claim more than consideration,—investigation; and the student in this domain, cannot but thank him for the many interesting paths he has pioneered for further exploration. Every page is replete with some new view, some unlooked-for grouping of recondite and apposite facts; and these analogies, so novel and yet so correct, in most cases, furnish him with the most interesting and,—if true,—the most momentous deductions and inferences.

E. g.; the placenta, he compares to the liver in its anatomical organization and function,—the hepatic arteries in this, being analagous to the maternal uterine in that; the vena porta to the hypogastric artery of the foetus; the hepatic veins to the branches of the umbilical veins, and the gall-duets to the uterine veins. This analogy is made more complete by tracing a correspondence in the contents of these vessels, in their nerve-supply, and in their anatomical organization and office. By a series of such premises and comparisons, he arrives at the proposition: That the blood is arterialized by the combined influence of the organic nerves derived from

the mother and foetus, in the placental lobule or gland;—in the same manner that the nerves supplying other glandular bodies affect the blood in such glands, as shown by M. Bernard.

We have not space for a review, *in extenso*, of the remaining sections, and less than this would do the author gross injustice; we, therefore, refer our readers to the volume itself, for Dr. O'REILLY'S views of the organic nervous system, etc., etc., the first of which is an ultra-recognition of the doctrine, that *Life is Nerve-action*, and its seat is in the organic nervous system.

ADDRESS Delivered at the Opening of the New Clinical Lecture Room of the Philadelphia Hospital.—By Dr. J. L. LUDLOW, one of the Medical Board and Lecturer on Clinical Medicine. Philadelphia: 1861. 8 vo. pp. 26.

An attempt to give anything like a satisfactory "general account of the rise and progress of Clinical Instruction," within the limits of an introductory lecture, might be reasonably anticipated to end in disappointment; and we must confess to this feeling on laying down Dr. LUDLOW'S *Address*. But surely, we had a right to look for something interesting and instructive where the theme itself was so suggestive and important; we might expect, at least, tolerable grammar and correct orthography from a lecturer in a Philadelphia school,—“Philadelphia,” where “has been erected that medical reputation and renown, which has eclipsed all the other cities on our continent, and made Philadelphia, (which may she long continue to be,) the metropolis of medical science in the western hemisphere.”*

Dr. LUDLOW has done himself injustice in allowing, what are evidently nothing but the rough notes of his address, to be handed to the printer, and thence set before the profession, without his revision, in even so vital a matter as the connection of the component clauses of a sentence, as in the following:—

“Notwithstanding the American Colonies boasted several

* Page 19, Dr. LUDLOW'S *Address*. (“Which she were that good in her heart,” as Joe Gargery says.)

medical characters of note, and as early as 1750, the body of a criminal, Harmanus Carroll, executed for murder, was dissected, and the blood vessels injected for the instruction of medical students, by Drs. John Bard and Peter Middleton of New York. (The *first recorded* dissection of the human body for medical purposes in this country.) And although in our own city lectures had been delivered, yet no systematic course of medical instruction was given in this country until 1765, when Drs. Shippen and Morgan, delivered the first *course* of lectures in this city."

Of course, Dr. L. would not have allowed this to stand uncorrected, had he seen the proof;—nor "educed" for *adduced* on the following page (17), ninth line from the bottom; nor "breech" for *breach*, page 24, second line; the substantive "wreaths" for the verb *wreathes*, same page, sixteenth line, and other similar errors, too numerous to be excusable as mere oversights—for very evidently, he did not see either them, or their context, after the manuscript had passed from his hands.

The following extract proves that Dr. LUDLOW can write correctly, and that the *materiel* is not wanting for an interesting discourse on the subject he had chosen, in place of the illy-connected jumble of dry dates and odds-and-ends he has caused to be printed:

"And now, gentlemen, we have arrived at that epoch in the history of medicine in our country, when *the first Clinical lecture* was delivered in America. In the Pennsylvania Hospital, on the 3d of December, 1760, Dr. Thomas Bond, one of the physicians to that institution, gave the introductory Clinical discourse.

"I cannot forbear quoting from this lecture, if not for instruction, nevertheless from curiosity, that we at this late day may see how the father of clinical instruction in America appreciated the advantages which must necessarily arise from a proper clinical course.

"Speaking of Dr. Morgan, the Professor of Theory and Practice in the University, he remarks:—'The field this gentleman undertakes is very extensive, and has many difficulties, which may mislead the footsteps of an uncautioned traveller. Therefore, lectures in which the different parts of the theory and practice of physic are judiciously classed and systematically explained, will prevent many perplexities the student would otherwise be embarrassed with; will unfold

the doors of knowledge, and will be of great use in directing and abridging his future studies. Yet there is *something further wanting*: he must *join examples with study*, before he can be sufficiently qualified to prescribe for the sick, for *language and books alone can never give him adequate ideas of diseases, and the best method of treating them*; for which *reasons Infirmarys are justly reputed the grand theatres of medical knowledge*. There the *Clinical Professor comes to the aid of speculation, and demonstrates the truth of theory by facts*, etc., etc.' Further on again he says: 'I am now to inform you, gentlemen, that the managers and physicians of the Pennsylvania Hospital, on seeing the great number of you attending the School of Physic in this city, are of opinion that this excellent institution affords a favorable opportunity of further improvement to you in the practical part of your profession; and being desirous it should answer all the good purposes intended by the generous contributors to it, have allotted to me the task of giving a course of clinical and meteorological lectures in it, which I cheerfully undertake.'

MEDICAL JURISPRUDENCE.—By ALFRED SWAYNE TAYLOR, M. D., F. R. S., Fellow of the Royal College of Physicians; Hon. M. D. Univ. St. Andrews; Member of the Royal College of Surgeons; and Professor of Medical Jurisprudence and Chemistry in Guy's Hospital. *Qui nesci ignorare ignorat scire*. Fifth American, from the Seventh and Revised London Edition. Edited, with Additions, by EDWARD HARTSHORNE, M.D., one of the Surgeons to the Pennsylvania Hospital. Philadelphia: BLANCHARD & LEA. 1861.

To those, already familiar with the former editions of Dr. TAYLOR's work, it will be only necessary to quote from the author's preface to the sixth London edition, to show how radically the present volume has been improved and amended: During the last fourteen years, improvements in medicine and jurisprudence have taken place to so great an extent that a practitioner, whether of the medical or legal profession, would, in the earlier editions, meet with deficiencies which on the present occasion it has been his special object to supply.

In the section on POISONS, a modification of the definition of the term poison, and of the act of poisoning, has been rendered necessary by crimes of recent date. Additions have been made on poisoning by ammonia,—chronic poisoning by arsenic,—the absorption and detection of arsenic in the dead body,—poisoning by arseniuretted hydrogen,—the detection

of absorbed mercury,—poisoning by Scheele's green, tartar emetic, locust beans, prussic acid, nux vomica, and strychnia. The chapter on the two last-named poisons has been entirely re-written. The reader will also find additional facts and cases in the sections on poisoning by *œnanthe crocata*, aconite, and lobelia. The details regarding poisons are, however, given throughout in a concise form, as constituting only a part of the general science of Medical Jurisprudence. A new edition of Dr. TAYLOR's work on POISONS has been published by BLANCHARD & LEA, and to this the reader is referred for that special information on facts, whether of a legal, medical, or medico-legal kind, which belong to the subject of Toxicology.

In the section on WOUNDS, the additions include the rules respecting dying declarations made to medical men,—the detection of blood on weapons and clothing,—the medico-legal examination of wounds,—the microscopical and chemical analysis of blood,—*cicatrices*,—locomotion after severe injuries,—and the effects of concussion of the brain and spinal marrow, illustrated by recent cases.

Additional facts have been introduced into the sections on PREGNANCY, DELIVERY AND ABORTION; and new cases are appended to the subjects of Tenancy by Courtesy, Protracted Gestation, and LEGITIMACY. In the chapter on RAPE, additions have been made to the medical proofs of rape on infants and children.

The chapters on DROWNING and other forms of death by Asphyxia will be found to contain new facts and cases; and, lastly, in the chapter on INSANITY, the sections on Homicidal Mania and Dipsomania have been corrected and enlarged.

BRAITHWAITE'S RETROSPECT.—Part XLIV, of this sterling publication is just received, too late for extract from its richly-stored pages. The same marked ability, discriminating taste and enlightened judgment characterize the present volume, as have won for its predecessors the favor and esteem of the profession. The *Commentary on Midwifery, and the Diseases of Women and Children*, by the senior BRAITHWAITE, is one of the most valuable features, and a decided acquisition. The pres-

ent number contains a general index for the volumes of 1860-1861. The publisher, (W. A. TOWNSEND, 39 Walker Street, N. Y.), announces that the *Retrospect* has attained a permanent patronage, in this country, of five thousand regular subscribers, a prosperity it richly merits.

Editorial.

LOCAL MEDICAL SOCIETIES.—We announced, two or three months since, that the Chicago Medical Society proposed holding its regular meetings once a week through the winter, and commended the project. We are happy to state that the result, thus far, has been more favorable than we anticipated. The meetings have been held regularly, and with very few exceptions, well attended. They have been occupied in the hearing of papers, the reports of cases of disease, and the discussion of questions of direct practical interest. Such meetings are not only pleasant and profitable in themselves, but they exert a powerful influence in stimulating those who attend to constant habits of study and observation, that they may the more creditably sustain their part in the discussions and other exercises of each meeting. The Chicago Medical Society has been in active and efficient operation eight or ten years, and we hope it has before it a still more prosperous future.

PROF. TITUS DEVILLE.—We learn by a recent circular of the Manchester Royal School of Medicine and Surgery, of England, that our highly esteemed friend and the Emeritus Professor of Anatomy in the Medical Department of Lind University, Dr. TITUS DEVILLE, has been appointed to the chair of Practical Anatomy, for the Winter term, and to that of Surgical Anatomy, for the Summer term, in that old and well established institution.

We take great pleasure in noting this evidence of the appreciation of his merits; for as a teacher of Anatomy he certainly

has few equals, either in this country or in Europe. We can assure such American physicians and students as intend visiting England, that they will meet a cordial reception at the Manchester Royal School, so long as Dr. DEVILLE remains a member of its faculty.

RUSH MEDICAL COLLEGE COMMENCEMENT.—The Annual Commencement of the Rush Medical College of this city, took place on the evening of Wednesday, Feb. 5th, 1862.

The exercises took place in the Lecture room of the College, and in the presence of a respectable audience.

Prof. D. BRAINARD, President of the Faculty, being absent, the degree of Doctor of Medicine was conferred on the following candidates by Prof. J. V. Z. BLANEY, who accompanied the ceremony by a brief and appropriate charge to the recipients, viz :

Albert A. Ames, of Minnesota.	Clark E. Loomis, of Illinois.
Charles E. Allen, of Illinois.	J. Meek Lanning, of Iowa.
Stephen G. Armstrong, of Indiana.	W. Meacher, of Wisconsin.
Aurelius T. Bartlett, of Illinois.	F. R. Millard, do
Leonard L. Bennett, do	George J. Monroe, of Illinois.
George W. Beggs, do	Wm. McKnight, do
James Brown, do	Wm. Rush Patton, do
Elijah W. Boyles, do	H. W. Richardson, do
W. L. Cuthbert, do	Charles M. Richmond, of Indiana.
W. D. Carter, do	W. R. Russell, of Wisconsin.
J. Griffin Conley, of Wisconsin.	R. E. Stevenson, of Illinois.
Samuel M. Dunn, of Iowa.	S. B. Ten Broeck, do
Thomas G. Drake of Indiana.	J. Allen Torrey, of Wisconsin.
James B. Farrington, of Tennessee.	A. H. Whipple, do
A. Z. Huggins, of Iowa.	D. B. Wren, of Ohio.
Jacob H. Houser, of Indiana.	J. A. Ward, of Illinois.
Riley B. Hayden of Michigan.	E. H. Winston, of Wisconsin.
Jacob M. Hagerty, of Illinois.	

The honorary degree of Doctor of Medicine, was also conferred on Dr. J. C. Taggart, of Beloit, Wisconsin.

The valedictory address was delivered by Prof. J. W. FREER, and was listened to with attention and profit.

Thus passed the Nineteenth Annual Commencement of this Institution.

MEDICAL DEPARTMENT OF LIND UNIVERSITY.—The Third Annual Commencement of this School will be held on the evening of Tuesday, March 4th, 1862. The Valedictory Address will be delivered by Prof. J. H. HOLLISTER. A premium will be awarded to the author of the best thesis; and the degrees will be conferred by the President of the Faculty, Prof. H. A. JOHNSON. The occasion will be one of interest, intellectually and socially; and the friends of the institution are cordially invited to attend.

RECEIVED.—From Blanchard & Lea, Philadelphia, the second edition of Gross' *Surgery*—for notice in our next; from Ticknor & Fields, Boston, *Religio Medici*, *Urn Burial*, and other papers, the writings of Sir THOMAS BROWNE, M. D.—Also *Border Lines*, O. W. HOLMES, M. D.'s introductory lecture,—both for future notice.

ANY OF OUR subscribers, or any of the former Secretaries of the Society, who may have copies of the *Transactions of the Illinois State Medical Society*, for the years 1853 and 1855, and who can spare the same, would confer a favor upon the editor of the EXAMINER, by forwarding them, by mail or express, at our expense.

APOLOGY.—We hope our readers will excuse the late appearance of this and the preceding number of the EXAMINER.—The evil shall soon be corrected.

CHLORATE OF POTASH AS A REMEDY FOR FŒTID BREATH.—Many persons complain of fœtid breath who cannot attribute it to bad teeth or neglect to keep them clean; the gums and mucous membrane of the mouth are perfectly healthy. The bad odor must come either from the lungs or the stomach, and nine times out of ten it comes from the latter. In this case we have a simple, prompt and certain remedy in the chlorate of potash. Take, three hours after eating, a teaspoonful of a solution of six grammes of the chlorate in a hundred of sweetened water, and at the same time rinse the mouth with the solution.—*Boston Med. and Surg. Journal*.

SYPHILO-VACCINATION.—Dr. A. Viennois of Paris, has recently published a paper in the *Archives of Medicine* on the transmission of syphilis by Vaccination, illustrated by numerous cases of syphilis communicated simultaneously with vaccine lymph. The conditions of this transmissibility he believes to be the taking of blood with the lymph from a person affected with constitutional syphilis. And such matter, Viennois writes, will communicate *both* diseases; the vaccine vesicle appearing first. But after the usual period of incubation, the syphilitic tubercle also appears on the vaccinated part, and is soon after followed by secondary symptoms.—*Vaccination*, by A. N. BELL, M. D.

IT IS STATED that Dr. LAVAU, of Birac, called the attention of the Academy of Medicine of Paris to the importance of sulphuret of lime in the regeneration of bony substance. M. Lavan observed, more than twenty years ago, that this agent, diluted in olive oil and used in frictions to destroy itch, induces enlargement of the joints of the fingers. This remark led him to prescribe frictions with sulphuret of lime on the head of rickety subjects whose fontanelles were excessively large, or persisted beyond the normal period, and he obtained with surprising rapidity the ossification and obliteration of these membranous apertures. M. Lavan therefore surmises that the same treatment may perhaps be also applicable to the secretion of the periosteum in the great process of the reproduction of bone.—*Champonnière's Journal of Pract. Med. and Surg.*

LEUCORRHŒA IN PREGNANT WOMEN.—With a view of testing the accuracy of Cazeaux's assertion, that seven-eighths of all pregnant women had ulceration of the neck of the womb, Charrière examined one hundred pregnant women indiscriminately, as they offered themselves to his notice, and came to the following conclusions: Leucorrhœa precedes and gives rise to the ulceration of the cervix. The congested conditions and processes of hypertrophy taking place in the pelvic organs are the causes of this leucorrhœa. At first a physiological condition, it may become morbid under the influence of a bad state of health. Nearly two-thirds of pregnant women have leucorrhœa. Nearly eight-tenths of these have ulcers of the cervix. Treatment: Attention to the general condition, mild aperients and preparations of iron, and remedying disorders of digestive organs. Local treatment would doubtless frequently induce abortion.—*Bull. de Ther. through Lancet and Observer.*

NEW METHOD OF ADMINISTERING CHLOROFORM.—At a recent meeting of the Obstetrical Society, Dr. Simpson described a plan of administering chloroform which he has now adopted in preference to that at present in use here. The present mode is to fold up a handkerchief and pour into the hollow a quantity of chloroform, and then hold it at some distance from the face, so as to admit of atmospheric air being inhaled along with the vapor. The new plan is to lay a single layer of handkerchief over the face, and let the chloroform fall on it drop by drop. The advantages are these: 1. That there is less danger to the patient from the smaller quantity applied at a time. 2. That anæsthesia is more speedily produced. 3. That the quantity of chloroform required is less. Various gentlemen who had made trial of the plan confirmed the value of this process; and Dr. Young in particular stated that he had kept a patient narcotized for ten hours with two ounces and a half of chloroform.—*British Med. Journ.*

PHTHISIS.—In a recent communication to the French Academy of Medicine, by M. Piorry, on the treatment of phthisis, he presents the following summary of conclusions:—

1st. Pulmonary phthisis is a collection of numerous morbid phenomena, and not a morbid unit.

2d. There does not exist, nor can there be, a special remedy for it, to destroy a unit which has no existence.

3d. That consequently iodine, tincture of iodine, no more than chlorine, salt, tar, can be considered as anti-phthisical.

4th. That it is necessary, in order to the proper treatment of phthisical persons, to appreciate and specify the particular organic affections which they present, and to meet them with appropriate remedies.

5th. That hygienic precautions, intelligently advised, may prevent the development of tubercle.

6th. That by proceeding in this way, by combating the particular affections which occur together or succeed each other, we have a rational treatment of phthisis, which can show a fair number of perfect cures, and a very large number of palliated cases.

REPRODUCTION OF THE INFERIOR MAXILLARY BONE.—The May (1861), number of Champonniere's *Journ.* contains further interesting reports of successful operations for the reproduction of bone:—

M. MAISSONNEUVE laid before the Academy of Sciences another instance of the reproduction of bone. In this case,

the right side of the inferior maxillary was extracted *in toto*, with the articular condyle, and has been so perfectly replaced by the efforts of nature, that it is now almost impossible to discover which side of the jaw was removed by the surgeon. The patient was aged 35, a circumstance which imparts additional interest to the case, inasmuch as the generation of bone, at that period of life, is less active than in youth. Another singular detail is the preservation of the teeth, which were left by the operator attached to the gums, as moveable as a string of beads, and became subsequently consolidated, by the closing up of the ossified layers, secreted by the periosteum. Unfortunately, after having performed their functions for a space of two years, they, one after another, dropped out; but the patient, nevertheless, manages to masticate his food and to speak distinctly.

In another case related to the Academy, of the reproduction of both tibia and fibula, it is interesting to notice that both malleoli were included in the part removed.—*Berkshire Med. and Surg. Journal*.

We shall, in an early number, present to the readers of the EXAMINER, the details of an analogous case to the above, which the class of the Lind Medical Department have had an excellent opportunity of observing, in Prof. ANDREWS' Surgical Cliniques at the *Mercy Hospital*.

QUININE IN THE DROPSY OF SCARLATINA.—Dr. Hamburger has given this drug in forty-seven cases, and in forty-four improvement took place at once or in a very few days; in three cases only was there no change either for better or worse. The effects observed were, a diminution of the febrile symptoms of the subacute period, increase of the urinary secretion, which became more clear, absorption of the effused fluid, even the resolution of abscesses already formed, return of appetite and strength. The urine, nevertheless, continued to be albuminous for some time, but this was no obstacle to the progress of convalescence.

According to the summary which Dr. H. gives of his observations, it is in the chronic form of scarlatinous dropsy that the action of quinine gives the best results, and is manifested with the greatest rapidity; in cases of this kind improvement commences almost immediately after the first doses. At the commencement, so long as the acute period continues, the employment of quinine may be deferred for a few days, unless the danger is imminent.

On many occasions, Dr. Hamburger has seen the condition of the patient remain the same for many days, or to be gradually growing worse, the urine becoming very dark, and the dropsy increasing. The quinine was then given boldly, and a happy result was the consequence. If a marked improvement is not manifested at the end of three or four days, the remedy must be dropped; but even in this case it should not be regarded as entirely useless, for it seems to act upon the specific character of the disease.

The dose to be given is from half a grain to two grains, twice a day, for children, and three or four grains for adults. During the use of the quinine the diet should be carefully watched, great care being taken to avoid over-tasking the very irritable alimentary canal by overloading it with food or drink. —*Gaz. des Hop.*, from the *Boston Med. and Surg. Jour.*

NEW PROCEDURE FOR THE LIGATURE OF THE SUPERFICIAL PALMAR ARCH.—Dr. E. Bøkel, Fellow of the University of Strasburg, has recently published, in the local *Medical Gazette*, some new indications which may guide the operator in his search for this artery, and permit him to secure it without unnecessarily extensive incisions.

‘Place the thumb,’ says Dr. Bøkel, ‘in the greatest possible abduction, and draw a line from its ulnar edge across the palm of the hand. In front of this, which may be denominated the guiding line, draw a second in a parallel direction, at a distance of a third of an inch nearer to the fingers, or more correctly at an equal distance between the first line and the middle cutaneous fold of the palm; this is the precise position of the superficial arch, and if the skin and palmar fascia are divided here, the artery will be at once exposed, and found reposing on a layer of fatty tissue which separates it from the nerves and tendons. No apprehension of wounding these need therefore be entertained.

It will perhaps be alleged that no fixed rules can apply to an artery so irregular as the palmar arch; but it must not be forgotten that the anomalies alluded to refer less to the exact situation of the vessel than to the dimensions of its supplying branches. I have performed the ligature above twenty times on the dead subject, guided by these rules, and have never once failed in alighting on the artery in the exact position described.

An accurate knowledge of this anatomical detail has another advantage quite as great as that of giving increased facility in finding the artery, viz., it supplies us with the means

of avoiding it. Phlegmonous inflammation beneath the palmar fascia, at the same depth as the arch, frequently requires incision, which is never extended toward the wrist without a certain amount of hesitation. The indications I have mentioned will permit the surgeon to use the knife with more boldness, and at the same time with greater safety, and they have already done me good service for this purpose.—*Med. and Surgical Reporter*.

NEW SURGICAL PROPOSITIONS.—The following new Surgical principles are offered for criticism by Prof. COOPER of the *San Francisco Medical Press*:

1st. That atmosphere, admitted into the joints or other tissues, is not a source of irritation or injury, except where it acts mechanically; as, when admitted into a vein, by producing asphyxia; into the thoracic cavity, by its pressure, producing collapse of the lungs, or when, by the long continued exposure of a large amount of surface of any of the internal organs, whose normal temperature is much above that of the atmosphere, it reduces it so as to produce a morbid action.

2d. That the division of entire ligaments about the joints is no impediment to their ultimate strength and mobility; but on the other hand, this operation will often greatly facilitate the cure, by enabling the surgeon to open the affected part fully, for the purpose of applying medicinal substances to the articular surfaces, when these are ulcerated or otherwise diseased.

3d. That the only true mode of treating ulcerations of bone, however slight, within the joint, is to lay it open freely, and apply remedial agents directly to the part affected.

4th. That opening the joints early, in case of matter burrowing in them, is far more imperiously demanded than the opening of the parts thus affected, and the operation produces no further pain or inconvenience to the patient, in any respect, than when performed on parts remote from the joints.

5th. That after opening a large joint, the knee, for instance, by an incision several inches long, the wound should be kept open by the introduction of lint, or other similar substance, until the parts within the articulation become healthy, and in all cases, it should be made to heal by granulation.

6th. That extensive wounds, opening freely the large joints, such as the knee, (even when lacerated, as by a saw, which must necessarily heal by granulation,) do not as often

give rise to violent symptoms as very small wounds, such as are made by the corner of a hatchet, an adze, or a pen-knife, which heal on the outside by first intention.

7th. That there are no known limits beyond which a tendon will not or can not be reproduced after division, provided the parts are made to heal by granulation, and that the present acknowledged rule of two inches being the maximum distance in which the divided ends of a ligament, or tendon can safely be separated, has not the least foundation in fact.

CLERGYMAN'S SORE THROAT.—A writer in a London secular journal, suggests the following, as an explanation of the cause of this dread of public speakers, more especially of the pulpit :

If we look at the creatures who use their throats for vocal purposes—singing birds for example—it will be found that in doing so they always lift up their heads. The canary raises its head before it begins to sing, so that every muscle of the throat is brought into full play. The dog, when he barks, follows the same rule and for the same reason.

To continue the analogy. We find all public speakers, except the clergy, adopting—not from instinct, but from necessity, happily for them—the same law. Members of Parliament, barristers and actors, all occupy a different position towards their audience from that of clergymen. The barrister stands below, and speaks up to the judge and jury, thus allowing full scope for the expansion of the muscles of the throat and chest. The actor likewise addresses an audience arranged in tiers above him, so that he can speak in an easy and natural manner. But we, clergy, adopt just the reverse of all this. Placed in a pulpit inconveniently elevated, we have to speak down to the people. The muscles of the throat are necessarily compressed. Congestion takes place, perhaps only a little each time, until the power of little combines to produce that relaxed condition of the throat which completely disables the clergyman, and renders him unfit for public speaking.

Many clergymen have told me that they would prefer to preach two sermons than read the prayers once, so far as a trial of their voice is concerned, and the reason is obvious, if the analogy I suggest hold good.

Having suffered myself, I can speak freely on the subject ; and after trying many remedies, without success, I at last regained my former strength of voice by adopting the following plan : —

I learned the prayers by heart. This enables a clergyman

to speak without stooping, while it certainly adds to the solemnity of the prayer. The next step was to preach without the manuscript, or at least to know the sermon so well that it is not necessary to read with the head downwards. The preacher thus can address himself to the audience with perfect ease to himself, owing to the unrestricted action of the vocal organs.

In my own case, relief was very soon given to the congested vessels, and gradually they became quite restored, and for some years they have continued so, whereas, before this plan was adopted, one sermon a day produced hoarseness.

This is good physiology, and we commend the suggestion to the attention of the profession.

POSITION IN ETHERIZATION.—Dr. C. T. JACKSON, in a letter to the *Boston Med. and Surg. Journal*, communicates some additional facts relative to the influence of the position of animals during etherization, a point strongly urged, now, by all writers on the use of anæsthetics.

Dr. J. says "I had occasion to converse with a very intelligent and skilful veterinary surgeon, who resides near Boston (Dr. A. B. Wilton, of Dorchester,) from whom I obtained the results of his extensive experience in operating upon domestic animals, under the influence of ether.

He informed me that if a horse is etherized and laid on his back, with his nose up, he will certainly die, owing to the falling back of the tongue, and the consequent pressing down of the epiglottis, so as to produce suffocation. He mentioned four instances, in which he had witnessed the death of horses, during the operation of castration, from the effects of ether and the above-named position. His experience with ether had also proved that death from it never takes place if the horse is laid on his side, with his nose horizontal. His experience had also been extended to the etherization of cows, particularly in cases where mechanical aid was required in removal of the calf, and he has never lost one of them from the effects of ether. When he has had occasion to kill useless horses or dogs, he has made use of ether, aided by the position named, and he says they die easily, without a struggle—asphyxia resulting from closing of the glottis during the anæsthetic state. These facts corroborate those observed on the human subject by Dr. Petrie, of Liverpool.—See *Braithwaite's Retrospect*, Part xliii., p. 275.

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[NO. II

Original Contributions.

ARTICLE V.

OVARIAN TUMORS.

By WM. H. BYFORD, A. M., M. D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, IN THE MEDICAL DEPARTMENT,
LIND UNIVERSITY, CHICAGO, ILLINOIS.

III.—CAUSES AND PROGNOSIS OF OVARIAN DROPSY.

It is extremely doubtful whether there is anything in the general condition of the patients that predisposes to the development of ovarian tumors. There is quite a disposition, however, with a certain class of authors, as will be apparent to any careful reader, to trace most chronic enlargements to scrofulous taint in the system; and these gentlemen express the belief that scrofula predisposes to ovarian disease,—in what way we are not informed. I think that no general conditions, but those resulting from age, have anything to do with their predisposition. The term of life during which menstrual influences are exerted upon the general organization, is very much more frequently the time when it is most active. So that we may very safely conclude that in the function of menstruation we have a predisposing cause of ovarian disease. It is true that ovarian tumors have been found in the ovaria of infants and fœti, and originating in very aged females; but this probably is as rare an exception to the general rule, that they occur during menstrual life, as the occurrence of men-

struation in infancy and old age is to the general rule that this takes place at the usual time. And probably, too, a careful examination of the anatomy of these exceptional cases, will prove them to be as exceptional in nature to the ordinary ovarian tumor, as the time in which they occur would seem to indicate. Some circumstances connected with menstrual life, would seem also to increase the predisposition. Sixty-one per cent., according to WEST, of the patients are married, while only twenty-nine had never been married. After making allowances for the greater proportion of ladies at twenty-five who are married, I think we may fairly infer that marriage adds somewhat to the chances of the occurrence of ovarian dropsy.

That patients who are the subjects of this disease should be less likely to have children, than those in whom ovulation is more perfect and complete, will not, I think, justify us in setting down sterility as the cause of it in any way, but it is more probably connected as an effect. During menstrual life, the most obnoxious time is between the ages of twenty-five and forty, the time when the sexual functions are exercised with more activity than any other. So that it would be right to say that menstruation and marriage both predispose to ovarian disease.

Unhealthy menstruation seems to be more commonly coincident with it than healthy. Abortions and premature labor are so, likewise.

We should attach sufficient importance to the fact that it occurs in unmarried persons as often as twenty-nine per cent. This induces Dr. WEST to remark, that "it occurs in the unmarried oftener than any other organic disease of the sexual organs."

The exciting or proximate causes are such as excite the ovaria and induce abortive efforts at ovulation; what does so, we are not able to say with certainty, but we can say what might and consequently does produce this effect.

Inflammation of a low grade and somewhat chronic duration, might cause induration or thickening of the indusium,

so that it would not yield to the upheaving pressure of the ovisac, so as to burst or become absorbed and permit dehiscence, or the peripheral portion of the proper substance of the ovary might be condensed by it, and thus rendered unfit for a covering for the tumor.

The probabilities, I think, are quite in favor of this mode of initiating these morbid growths, or merging a healthy into an unhealthy accumulation. When once thus commenced, the stimulus of increased incretion of fluid would carry on a kind of hypertrophy in the involuera that would permit of a further enlargement. Now the local circumstances that are regarded as the causes of the disease, would favor the occurrence of inflammation, and are very frequently attended with some of the symptoms of it. The local condition of the ovary and uterus during each menstrual period, is often attended with pain in the ovarian region of just such a character as we would expect to indicate inflammation. This ovarian pain is present in other excited conditions of the sexual organs also, thus showing that they are very frequently the focus of painful vascular turgescence, if not inflammation. How easy it is to conceive the possibility, nay, the probability of nutritional vitiation to an extent sufficient to prevent debiscence of the ovum after it is matured in the ovisac. If this state of things may take place in consequence of menstrual, or congestions from other transient or mild causes, how much more likely is it to be induced by the inflammations which succeed to abortions or parturitions. While inflammation is probably the cause of the beginning of the development of ovarian tumors, it does not seem necessary to their continued development, as the accumulation of fluid in a shut cavity with a secreting internal surface, is a matter of course, and the limit of its amount, for the most part, does not depend upon any thing but the capacity of the involuera to grow, which they usually do until interrupted by external circumstances.

Although inflammation may, in most cases, be the cause of the toughness of the covering to the ovary, which prevents the escape of the ovum, this condition may result from some

other local circumstances. Congenital formation may be such as to give rise to this difficulty,—possibly, may allow development of the ovisac; may allow the involucra to increase as fast as the demand for more room becomes necessary.

Our knowledge with regard to the prognosis, is unfortunately too definite. There is no need of much conjecture with reference to this matter; the termination is too frequently demonstrated. In arriving at prognosis, with reference to any disease, we ought to consider whether its ordinary course is, after a time, to a termination in health, as is the case with many diseases, or, there being no such favorable tendency, what are the probabilities of a cure. Unfortunately, there is no tendency to spontaneous recovery, worth taking into consideration; in ovarian dropsy, probably not two per cent., but would, after a longer or shorter time, terminate in the death of the patient. While this is the case, it does not properly represent the value of a life, threatened by this affection. Some patients live a great many years in comparative comfort; but, by a large odds, the case is generally very different,—only a few years being sufficient to finish the course in a downward direction. The average duration of life is probably about five years from the time it is first perceived. So much difference of opinion exists among observers, and so unsatisfactory are the statistics, that the average number of recoveries under treatment, is quite doubtful. The mortality taken altogether, I should say, is not far from fifty per cent.,—a fearful fatality, and the average duration of life under treatment, and in spontaneous cures, will not exceed very much, if at all, seven years. Yet, in *selected* cases, probably two-thirds are so that the patients will enjoy perfect health. Much of the mortality, in my estimation, depends upon the injudicious selection of cases for the different modes of treatment, which have of late years, proved successful. However discouraging the prognosis, in general, may appear in this kind of examination, we are not justified in exterminating the hope of our patient, by applying it to her case without particular investigation into the peculiarities of it. In

fact, individual prognosis is too often left out of view, and general results are applied to individual cases. In certain instances, either too favorable or unfavorable, an opinion is yet to be expressed, to the undue elation of our patient, or the perfect annihilation of all her hopes. It cannot be the case, that all instances of the most unfavorable diseases, are to be unconditionally consigned to death; nor that any one of the more favorable classes of disease is to terminate in health, without question.

We should, therefore, carefully examine every individual case, with reference to its own peculiarities, its nature, and the character and condition of the patient. Is the disease simple, or compound of cyst and solid, polycystic, or monocystic? The monocystic is very much more favorable for treatment, and terminates in spontaneous recovery oftener than the polycystic. The duration of life is greater, also, in the monocystic. The cases in which there is no great amount of solid matter, are more favorable for treatment, than those in which the solid is predominant, but ordinarily, the more of solid material, the less rapid the growth and, consequently, the longer the duration of life in the absence of interference. How long has the tumor been in attaining the present size? If several years have elapsed since the patient was aware of its presence, it will probably continue to increase slowly, unless, as is sometimes the case, more activity has lately been observed, and a tumor that had formerly grown very slowly, and required a number of years to acquire half its size, has grown the rest in a few months. In this last, there is every probability of a rapidly fatal course. Again, if the patient has not known any increase of size, until within a few months past, and yet is quite large, the prognosis is bad. Our prognosis is influenced by age, to a considerable extent; occurring in young persons, it is more likely to advance rapidly, than in old ones. A woman at forty, is not so apt to develop an ovarian dropsy so rapidly, as one at sixteen to twenty.

Ovarian dropsy will advance less rapidly after menstruation ceases, than before, and the earlier in menstrual life, the

more rapidly it will advance. The prognosis, as a general thing, therefore, is worse in the young than the old. If we should decide the question, how long will she live by age, we should speak more favorably to the woman advanced in age. The fact, too, of the ordinary chances for the length of life being in favor of the young, she is more likely to fall a victim to the advance of the disease, than the older. We must take into consideration the circumstances that complicate it in the last stages, when we examine particular instances.

The inflammation, the pressure upon the rectum, bladder, stomach, bowels, and above all the kidneys, the nervous system, the muscular system, nutrition, as shown by the signs of emaciation or otherwise, should all be carefully scrutinized.

IV.—DIAGNOSIS OF OVARIAN DROPSY.

The diagnosis of ovarian tumors, when tolerably large, and not complicated with more than ordinarily embarrassing circumstances, is not difficult; but instances do occur where the matter is far otherwise, and a positive opinion cannot, with propriety, be given. For the most part, the diagnosis is sought to be perfected with a view to treatment, and we ought not *always* to be too solicitous about exactitude in this respect, until the urgency of the case demands it for the sake of treatment. When it is desirable to enquire particularly into the diagnosis, as a general thing we wish to know, 1st. Whether the case under examination *is* an ovarian tumor. 2d. What sort it is, solid, fluid, or mixed. 3d. If fluid, whether simple or multiple, — (multilocular or unilocular — polycystic or monocystic). 4th. Whether adherent or not. All these questions are very important, so far as our attempts to cure the case are concerned, and without an intelligent solution of them, our treatment will be experimental. Almost all our diagnostic means are physical; the history and rational symptoms, although valuable, are much less so than personal inspection with various physical appliances. The utmost freedom of examination, therefore, should be insisted upon, before our pa-

tient can, of right, demand our opinion. This will neither be asked nor given until the case has assumed something of gravity and importance. I have known medical men to give an opinion on imperfect examinations, that they were afterwards under the necessity of reversing; and I think, as a general thing, more errors of diagnosis in female diseases are committed by the imperfect use of our now highly improved measures of exploration, than originate in any other way.

The history will afford us in many cases, however, very valuable aid in arriving at correct conclusions. It is now pretty well determined that the average duration is about three years. In this time, it will spontaneously produce fatal effects, by great size and extreme distension, and the resulting damage. This is longer than pregnancy, and a shorter time than solid fibrous growths will ordinarily reach the same results. The age at which they are most likely to occur is an average of 26 years, according to BROWN,—although, they may occur at any time during the active condition of the sexual functions, while the ovaria are subject to menstrual congestions and their effects. Quite a large number of cases make their first appearance in early menstrual life. I knew one in which the beginning of the tumor must have been simultaneous with, if not antecedent to, the commencement of the function of menstruation. Fibrous growths of the uterus are not likely to begin so soon. Their increase after being first observed, is comparatively rapid, more so in the young, than those somewhat advanced in age. They are not usually attended with pain in their own proper substance; though, this is not always so, for the congestion and hyper-excitement may be attended with pain and soreness. The functional disturbance, in their early stages, occurs in the pelvic viscera:—1st. On account of pressure, such as tenesmus, dysuria, dragging or weight in the pelvis; and 2d, imperfect menstruation. Sometimes the menses are suppressed, scanty and painful, but often no deviation from the propriety of health is observed. The main thing in the history of the case, in this respect, is to remember that the symptoms point in the beginning to trouble

in the pelvis. It is generally, or at least sometimes, stated that the tumor rises from one iliac region and continues to occupy one side for some time. This, I think is the exception to the rule, that they are at first central (and by Dr. FREDERICK BIRD is considered an evidence of adhesion.) They probably, when large enough to overcome the support of their peritoneal envelope fall into the *cul-de-sac* of Douglas behind the uterus; and then, as they grow, come up in front of the promontory of the sacrum, until they are large enough to be felt above the pubis, having their point of support in the hollow of the sacrum, instead of one of the iliac fossa. The patient will usually speak of it as a lump, instead of saying that she is swollen, as in pregnancy. The abdomen does not enlarge generally, according to her statements, but by a tumor rising in it. She has watched it coming up out of the pelvis, and not starting from above or from one side, and encroaching upon the abdomen from either of those directions. The knowledge derived by physical examination, as already stated, is most valuable; and while the modes of procedure are the same, and applicable to all stages of growth and enlargement of the tumor, we will be able better to describe and understand them, as made use of for one that has arisen from the pelvis and pretty thoroughly filled the abdominal cavity,—a tumor that has become obvious, and from which our patient is solicitous of being relieved. The means afforded us for physical examination are—1st, palpation, 2d, percussion, 3d, auscultation, 4th, vaginal and rectal digital examination, 5th, examination with the sound or uterine probe. These may be used separately, or combined in any given case, some being more valuable in some cases, and others in different ones. Exploring instruments, chemical tests, and the microscope may also be used to great advantage. Palpation is of very little use while the tumor is still in the pelvis, and can only be of avail in conjunction with the vaginal touch or the uterine probe; as it rises into the abdomen, however, this process of examination comes into use, independently. In this condition, we can examine the consistence, size, shape and mobility of the

growth, and form some opinion as to its adhesion to the walls of the abdomen, and its primary attachments. In conjunction with some other processes of examination, it is more useful at this stage and size.

In the ordinary condition of the contents of the abdomen, the intestines lie in contact with the anterior and lateral walls, except in the right and left hypochondriac, where the liver over a considerable space, and the spleen, a smaller, displace them. In consequence of this state of things, the resonance caused by the gas in the alimentary tube extends all over the anterior and lateral walls, save the above exceptions. Dulness upon percussion, therefore, indicates a change in this respect. The mesenteric attachments between the posterior wall of the abdomen and intestinal tube prevent them from being separated to any considerable extent, hence tumors occupying much space are apt to displace and get anterior to the latter. If the tumor springs from the pelvis, this is particularly likely to be the case, as well from the above facts as the direction given to it by the axis of the superior strait; thus it is with the gravid uterus, uterine fibrous growths and ovarian enlargements. Growths from the pelvis perhaps more completely gain the anterior position than any other sort, unless it be such as are attached to the anterior wall originally. It may be observed too, that it takes a larger growth to disengage itself from intestinal resonance, when arising from the posterior wall than from any other situation in that cavity.

By percussio we may make out the boundaries, positions, and, to some extent, attachment and contents of an abdominal tumor. We should begin at the pubis, and follow a line upward to the ensiform cartilage; by so doing we will ascertain the central perpendicular extent. A good plan is to make four or five perpendicular explorations of this kind each side of the median line, extending the whole length of the abdominal cavity. After this has been done, we may proceed, by right angles to these lines, to examine the abdomen crosswise, from its lower to its upper boundary. We will seldom miss any important growth by this mode of proceeding. If there

is any doubt or obscurity, our pressure should be sufficient to bring out something of the flatness of sound from the spine, kidneys, etc. If we discover any point of sufficiently defined dullness to impress us with the idea of a tumor, we should, by percussing explorations, proceed from the point of greatest dullness to its circumference in every direction. In this way of examining, we will be able to trace it up the side to the hypochondriac regions, down into the pelvis, or define it so perfectly as to decide what must be its place of origin. Percussion and palpation will often enable us to determine the contents of a tumor as to its solidity, or fluidity. Placing the finger on one side of the tumor, while we percuss the other, if the contents are wholly fluid, a wave of liquid will be set in motion on the side struck, and traverse the space to the one of the opposite; if solid, of course nothing of this kind will take place, and the impulse will be given to the whole substance of the growth. Should the contents be fluid, separated by a number of partitions, the wave or fluctuation will be less distinct than in the one where no such division exists; but in fact the obscurity is so great, that we will be at a loss by this management to decide whether the contents are solid or fluid. A slight variation of this combination of tact and percussion will often clear it up however. When we wish to ascertain whether the fluid is contained in several cysts, we should place the pulp of the fingers of the left hand in the centre of the tumor, and then percuss with those of the right, first very near, then gradually increasing the distance between them, until we find a point at which the fluctuation becomes less distinct: this is the margin of the cyst over which our left fingers are placed. Still keeping them in position, we percuss around in every direction, until we have made out the boundary and size of the cyst under examination, when we may move the fixed fingers to its margin, and commence the same process around this point. Proceeding in this way from one point in the abdomen to another, in most instances we may trace the outline of all the cysts superficially situated, and thus enumerate them, and learn their relation and abso-

lute size. If solid bodies of whatever structure are incorporated in the mass and superficially situated, they may be detected,—their relative position, size, etc., determined with some accuracy. After tapping, when the abdomen is lessened, its walls lax and soft, palpation and percussion, singly or combined, become more demonstrative than before this operation. It not unfrequently is necessary, on account of the sensitiveness of the patient, when the tumor is small and the abdominal muscles much under control of the will or reflex excitation, to administer chloroform until unconsciousness is induced, and the influence should often be so profound as to abolish reflex sensibility. In cases where there is inflammatory tenderness, the chloroform will give us a freedom of examination which is indispensable to an accurate diagnosis, and that we could not without it, by any possibility obtain. Palpation and percussion may both be practiced ordinarily as well with the patient in the recumbent position on the back, with knees drawn up, shoulders elevated, and the abdomen stripped quite bare of covering; in many instances, however, variation of posture is indispensable to definite results—the standing, prone, etc. Very little need be said in this place about auscultation, as it is only applicable to the diagnosis between it and pregnancy, and will be dwelt upon when I come to speak of that more particularly. Vaginal and rectal digital examinations were among the first physical means employed in the diseases of females; and in ovarian disease are proper, and should not be dispensed with. The pelvis should be carefully surveyed by this method. The attachments, consistence and relations of the diseased mass to the various organs in this cavity should be carefully noted. The uterus, rectum and bladder so far as practicable, ought to be examined with reference to their healthy condition, position and involvement. Combined with external palpation, we may examine the tumor more thoroughly than with either one alone. Two fingers introduced into the vagina after the disease has somewhat advanced, and pressed firmly upward against it will perceive any impulse imparted to the tumor above. With the left hand, if we press

downward toward the pelvis, we may feel the motion of the diseased accumulation downward, and if the sudden impulse of percussion is applied above, we may feel an impression from its contents; if fluid, a wave or sense of fluctuation, if solid, the deadened impulse always given in such cases. When the tumor is small, and occupies the posterior peritoneal *cul-de-sac*, by introducing one finger in the rectum, and the other into the vagina, the tumor may be included between them, and thus examined with more accuracy than with either alone.

Dr. SIMPSON has taught us how to extend our examinations into the uterus, so that our information in this direction is very materially increased by the use of the probe, mounted upon a handle. Members of the profession, who appreciate the labors of Dr. SIMPSON, have by consent, named the instrument, the improvements and uses of which he has so ably promulgated, *Simpson's sound*. The most useful form, I think, of the sound, is round and plain, without any notches or edges, with the button end about two lines in diameter. Back of the head or button end, the wire should be about half the thickness of the end; from this, the wire should gradually increase in size towards the handle, until it is near a quarter of an inch thick. The material of which it is made should be soft enough to be bent into any shape we choose, and yet sufficiently firm to retain the flexure thus given.

The sound may be introduced into the uterus, and varied in its direction while we gently urge it forward to the extremity of the uterine cavity. The only obstacle a sound of the dimensions I have mentioned will meet with, will arise from want of correspondence in direction with the direction of the cavity in a uterus of ordinary size. The most simple and ready revelation of the sound or probe, is the direction and length of the uterine cavity. From this knowledge, much valuable deduction may be drawn. But it is employed for determining the relation of the uterus to pelvic tumors, according to the ingenious directions of Dr. SIMPSON, very handily and to excellent purpose. While the sound is in the cavity of the uterus, this organ may be fixed by holding the

instrument firmly in one position, or be moved in any direction, if not restrained by adhesion or accretional attachment to the diseased mass, or to some other organ. If the uterus be fixed, and the tumor moved by its side, or from it with the fingers introduced for the purpose, the motion will be felt affecting the uterus, through the attachments. On the other hand, if we watch the motion of the tumor with the fingers while the uterus is moved, the attachment or not will be determined, or the uterus may be moved in one direction, and the tumor in another. In this way, their attachments may be pretty certainly diagnosticated. The sound may be employed in the uterus with one hand, while palpation on the abdominal surface is effected with the other; and if the uterus reaches above the pubis, the distance the probe is separated from the external hand, or its relation with the median line of the abdomen, or the main bulk of the growth, will enable us to determine some interesting problems. The motion received by the sound from the pressure of the hand without, or *vice versa*, is of important significance, as will be more apparent as we advance. When, however, from all these sources of inquiry we fail to get a sufficiently definite answer, there is still another physical means of diagnosis which we are justified in employing, viz: *exploration*. If by means of an exploring needle or trochar we draw off a small quantity of fluid, it may be subjected to microscopic and chemical tests that will often enable us to determine the nature of the disease. Dr. G. HUGHES BENNETT, in a paper on ovarian disease in *Edinburg Med. and Surg. Journal*, quoted by BROWN says, as the result of his microscopic "examinations of different specimens of ovarian fluid, that the most constant characteristic of such fluid is its containing in greater, or less abundance, cells gorged with granules; and in addition circumambient granules having the same measurement as those encompassed by the cell-wall. At one time, I considered the size of these granules (if they can properly be so called) was constant; but subsequent observations have convinced me of the incorrectness of this conclusion—the size of the gorged cells and granules va-

ries greatly, even in the fluids from different cysts of the same ovary." There can be no question but that the nature of the fluid contained in these cysts is, in all its essential features, pretty constantly the same in the early stages of progress; but it is equally true that as they grow large enough to be influenced by pressure or other external causes, their composition, microscopically, must vary. The chemical nature of this fluid is more constant. It is alkaline in reaction, and highly albuminous; always coagulating when boiled or submitted to the action of strong acids. Another sort of exploratory examination is the evacuation of a part or the whole of the fluid, provided fluid flows through the tube. If so much fluid is drawn off as to greatly relax the abdominal parietes, the contents of this cavity may be much more thoroughly examined by palpation and percussion, and the nature of the growth ascertained quite definitely. We can then handle the abdominal contents, so as to trace any tumor within it to its attachments, get its precise size and shape, consistence, etc. Or if there should be no morbid growth, it will become quite evident, after a greater or less evacuation of the fluid by tapping.

After having passed in review, as above, the items of general diagnosis of ovarian tumors, I propose to enter upon a differential view of the subject; for there are conditions of disease and health of the contents of the female pelvis and abdomen, which they may be mistaken for. The following list is given by Mr. J. BAKER BROWN, of conditions that may be mistaken for ovarian tumor. "1st. Retroversion and retroflexion. 2d. Tumors of the uterus,—solid, fibrous, or fibro-cystic. 3d. Pregnancy. 4th. Pregnancy complicating ovarian dropsy. 5th. Cystic tumors of abdomen. 6th. Distended bladder. 7th. Accumulation of gas in the intestines. 8th. Accumulation of fœces in the intestines. 9th. Enlargement of the liver, spleen or kidneys, or tumors connected with the viscera. 10th. Recto-vaginal hernia, and displacement of the ovary. 11th. Pelvic abscess. 12th. Retention of menstrual fluid

from imperforate hymen or closure of the os uteri. 13th. Hydrometra.”

In cases of retroversion, or retroflexion, if minute examination with the finger per vaginam and rectum fail, and the symptoms are of a character to make a correct diagnosis important, the uterine probe will at once determine the distinction. In some instances, we might be quite unable to distinguish a small ovarian tumor from an impregnated retroverted uterus. Our proper plan in such cases is to await the peremptory demand for the knowledge, and then take the risk of introducing the probe; remembering the position of the mouth of the womb in retroversion, that it is not only near the pubis, but directed upwards as well as forwards, and that the os, in cases of misplacement by the tumor, is not directed upward, but nearly always downward,—certainly never, so far as my experience and reading goes, above the horizontal position. The probe will be equally available in examining the retroflected organ, and I think the probe should always be used where pregnancy is not strongly suspected. Should we feel much doubt of the existence of pregnancy in connection with retroversion, it would be better to lift the tumor out of the pelvis, when if it were retroversion, the uterus would be restored to its natural position, with the os near the centre of the pelvis. In endeavoring to distinguish between ovarian and uterine tumors, we should bear in mind that the latter almost invariably change the length and size of the cavity of the uterus. Where the sound is used, it will pass further than if the uterus was not involved. The rationale of this increase of size of the uterus, so generally found to be present, is, I presume, connected with the fact that the development of a tumor in, or from the walls of that organ induces general hypertrophy to some extent, as these growths are found to be a hypertrophy of some one of the uterine tissues. The tissues generally involved are the fibrous or mucous, as in hard or soft polypi from the internal, or hard from the external walls or intramural fibrous tumors. Uterine tumors are so intimately connected with the uterus, that this organ cannot be moved without imparting

more or less motion to the tumor, nor can the tumor on the other hand be moved, without in a similar way affecting that organ. This is not the case with ovarian tumors; they are so loosely connected with the womb that considerable motion is allowable without the other partaking of it. In the sound, we have the means of moving or fixing the uterus, and with the finger may watch the effect of motion upon the one or the other, as the case may be. When a fibro-cystic tumor is developed upon the uterus, containing fluid, the examination to ascertain whether there is an attachment with the uterus, and with a view to learn the length of the cavity, will give us clear notions of the matter. When we are satisfied that pregnancy cannot be the condition we may explore or tap it, as an additional means of accuracy.

Hard or fluid tumors arising from a distant organ or part of the abdomen, would have a different history from the ovarian tumor. If our patient is intelligent, her observation as to the place where first noticed, should be relied upon as valuable knowledge respecting the probable point of origin. Ascites, when excessive, may sometimes be mistaken for ovarian tumor, but the latter is more frequently taken for the former. When the patient lies on her back with the knees drawn up, so as much as possible to relax the muscles, and the abdomen is entirely exposed, in ascites the tumidity will be rotund, filling out in every direction, and will particularly bulge the depending portions. The flanks will both be full, the abdominal protrusion commence at the edges of the ribs, and will be equally soft at every point; fluctuation will be greatest at the most dependant parts, and resonance entirely absent; fluctuation will scarcely be perceptible in the highest part of the abdomen. These circumstances will remain the same under any change of position. If the patient stand up, the dullness is in the hypogastric and iliac regions; if she lie on her side, the dullness and fluctuation on the lower side, resonance and absence on the upper side. All this results from the water freely settling into the lowest points, let them be what they may. In ovarian tumor, alteration of position, from erect to recumb-

rives one of its chief advantages, according to an eminent reviewer, from "the fact that it was first written when the author was still a student, before he had his own particular experience to relate, and was willing and desirous of writing down simply the principles and practice of general experience." The work under consideration derives its chief value from a directly opposite fact, *i. e.*, that it is the fruit of a third of a century's study and experience, the ripe harvest of a rare combination of excellent judgment, extensive and enlightened research, and varied practical observation. That the intentions of the author, as shadowed forth in the following extract from the preface to the first edition, have been fully carried out, its popularity and wide-spread reputation fairly prove:—

The object of this work is to furnish a systematic and comprehensive treatise on the science and practice of surgery, considered in the broadest sense; one that shall serve the practitioner as a faithful and available guide in his daily routine of duty. It has been too much the custom of modern writers on this department of the healing art, to omit certain topics altogether, and to speak of others at undue length, evidently assuming that their readers could readily supply the deficiencies from other sources, or that what has been thus slighted is of no particular practical value. My aim has been to embrace the whole domain of surgery, and to allot to every subject its legitimate claim to notice in the great family of external diseases and accidents. How far this object has been accomplished, is not for me to determine. It may safely be affirmed, however, that there is no topic, properly appertaining to surgery, that will not be found to be discussed, to a greater or less extent, in these volumes. If a larger space than is customary has been devoted to the consideration of inflammation and its results, or the great principles of surgery, it is because of the conviction, grounded upon long and close observation, that there are no subjects so little understood by the general practitioner. Special attention has also been bestowed upon the discrimination of diseases; and

an elaborate chapter has also been introduced on general diagnosis.

The publishers have faithfully done their share in the production of an American volume of which we are all proud. The type, though smaller than in the first edition, is beautifully clear and distinct, the illustrations are excellent, both in the engraving and printing, and the binding is strong and substantial. By the use of the smaller type, the increase of matter is admitted, with no additional bulk,—indeed, the present volumes are less cumbrous than the old ones, and number some two hundred pages less.

VALEDICTORY to the Graduates of Rush Medical College, February 5th, 1862.
By J. W. FREER, M. D., Professor of Physiology and Surgical Anatomy.

We acknowledge the receipt of a neatly printed copy of Prof. FREER's *Address*, delivered as above.

About all has been, that can be said on such occasions, and he must be a genius who shall advance something new. But words of advice so earnest, sound and sensible as these, are always in season; and if they should lack the "unwholesome charm of novelty," are not the less valuable or acceptable.

The following points are extremely well put:—

The strong point of the charlatan and quack is in social chicanery and blaring demonstrations of what he has done and can do; the strength of the educated medical man is in his knowledge, gathered by such assistants as these—interrogating nature and demanding possession of its arcana. There is more real power in the microscope and the test tube than in the whole army of empiries, from the first quack who said: "Ye shall not surely die," to the last and meanest follower of Hahemann, who repeats to his deluded dupes a similar promise. * * * *

You are scrupulously to avoid, at all times and on all occasions, any and all disreputable professional associations; but grapple to your breasts, with hooks of steel, every upright, intelligent and high-minded physician—for in union there is strength. And alas! it is for want of this union—particularly in our own country—that our noble and beneficent calling has been measurably shorn of its sacredness—has been drabbed and dragged in the dust by every aspiring knave—until (I

blush to say it) the public have come to look upon pretension as the measure of qualification, and a gaudy tin sign, with staring hieroglyphics, as equal to a diploma from the most renowned institution of the world! Look to it, then, that you guard sacredly the honor and interests of your acknowledged professional brethren, for in doing thus, you will compel public respect, by convincing them that we are not a band of wranglers, but on the contrary harmoniously engaged in the completer development of principles embracing in their scope the highest temporal interests of the human race. * * *

The charge is frequently made that medicine, as a science, has been undergoing constant mutations. If by this, it is intended that it is a progressive science, we admit it freely; it is the glory of the profession. But, if by this, it is intended that it has been a history of contradictions—we repel it as begotten either of calumny or ignorance. Methods of accomplishing results have varied and will continue to vary, as men and times, seasons and surroundings change.

The objects sought by Hippocrates, we still seek to-day, and will continue to seek during all coming time. Powers and Turner may, and probably do adopt different methods of giving shape to their glowing ideals, from those adopted by Praxiteles and Appelles; but the same eternal principles vitalize all their creations. You may rest assured that were Hippocrates now living, he would be the disciple of no pathy or—ism—even to secure admission to the luxurious apartments of the hysterical or dyspeptic votaries of infinitesimal triturations.

RELIGIO MEDICI, A Letter to a Friend, Christian Morals, Urn Burial and other Papers. By Sir THOMAS BROWNE, Kt., M. D., Boston: TICKNOR & FIELDS. 1862.

The house of TICKNOR & Co. has done more to give us a good literature, by the sterling character of its books, its generous dealing with authors at home and abroad, and the artistic and mechanical perfection of its work, than any other house in our country. Their blue and gold books, started years ago with *Tennyson*, was a stroke of genius as rare as the power to write a poem; they could no more help being popular than the June roses can. Hosts of imitators bear testimony to their perfect beauty and fitness; and there is still only one house that can give us a blue and gold book.

This book is still better than any other yet printed, for our daily company, and it is just what we wanted. The old folios are buried in great libraries; the English octavos are very dear; Bohn's edition is of moderate price, but Sir THOMAS, like many a good man beside, wrote some as he was moved by the Holy Ghost, and some as he was moved by the publishers, and the present editor has carefully and reverently gathered one from the other. We suppose this octavo, in brown and crimson, 432 pages, printed on a generous paper, with a sweet portrait, quaint head and tail-pieces, exquisite initial letters, and running notes in the margin, is, to all other editions, what wheat clean sifted is to wheat in the stack. For some insight into the surpassing goodness of the book itself, the mingled wisdom, piety and learning, the curious blending of medical and religious suggestion, written in honest, terse old English, we must send the reader to the book. For the younger and rising men in the profession, especially, we can suggest no book likely to be at once so wholesome and so welcome, as this of the good physician; one of whose *Resolves*, found in his common-place book, we here transcribe:—

“To pray daily, and particularly for sick patients, and in general for others, wheresoever, howsoever, and under whose care soever; and at the entrance into the house of the sick, to say, The peace and mercy of God be in this place.”

Editorial.

THE AMERICAN MEDICAL ASSOCIATION.

The time is drawing near when some action should be had concerning the Annual Meeting of the American Medical Association. In common with many others, we deemed it advisable that the last annual meeting should not be held. The country was at that time in a state of feverish excitement, and there were few who took a lively interest in anything but current events. Had the meeting been held, we doubt if a respectable number of our medical brethren would have been called together. But the condition of our civil

affairs has changed, and this change gives a new tone to the feelings and temper of the people. Business is beginning to resume its former channels, and citizens are returning with increased interest to their former pursuits. The question which we now propose to the medical profession is this: Shall not the American Medical Association hold its annual meeting at Chicago, on the first Tuesday of June next?

So far from the present condition of the country constituting reasonable ground for further postponement, there are several reasons which render a meeting of the Association at this time particularly desirable. The civil contest into which we have been unexpectedly precipitated, develops many new subjects of interest and importance, which it behoves the profession to consider. A host of topics relating to military surgery and hygiene are now, for the first time in our generation, brought home to us, and their careful consideration devolves upon the profession. There will be no dearth of topics which, in the present state of affairs, will spring up in the deliberations of the Association, and which no other organized body of the profession can so appropriately consider. We conceive that the Association owes a duty to the country, the profession, and to itself, which it can only discharge by holding a stated meeting, and remaining in session long enough to deliberate carefully on all the important matters which will come up for consideration. We know that we utter the sentiments of many, when we urge upon the officers of the Association to see to it that the regular meeting in June be seasonably announced.

We copy the above from the *American Medical Times* of February 22d; and fully endorse its sentiments. We think there has been no time in the history of the country, when our Medical Societies, both local and general, could be more useful than at present. We are glad to see that such State Societies as have recently held their annual meetings, have been well attended. For ourselves, we can say to our brethren elsewhere, that we shall greet them in our goodly city with the greatest pleasure. We trust, the proper notices will be issued by the Secretaries and Committee of Arrangements, without delay.

SUMMER COURSE OF MEDICAL INSTRUCTION IN THIS CITY.—The Medical Faculty of Lind University, will continue a regular course of instruction, to such students as remain in the

city, through the summer. The summer course will commence on the first Monday in April, and continue until the first Monday in August. It will embrace one regular *Clinical Lecture* each day, and one familiar lecture and examination on some branch of medical science. Four of the Clinics, each week, will be given in the Hospital, and two in the Dispensary; affording one of the best opportunities for obtaining direct bed-side instruction, in practical medicine, surgery, and the diseases of women and children, that can be found in our country. The hour devoted, each day, to a thorough examination of the class, with such familiar oral instruction as the subject may suggest, is more especially designed to aid the student in a course of systematic and profitable summer reading. This part of the course will embrace instruction in nearly all the branches of medical science. The whole summer course of instruction will be *free* to all who matriculate in the Medical Department of the University.

ILLINOIS STATE MEDICAL SOCIETY.—The Eleventh Regular Annual Meeting of the Illinois State Medical Society will be held at Jacksonville, commencing on the *first Tuesday* in May, 1862. It is very desirable to have a full attendance of delegates and members from all parts of the State.

CHICAGO, March 1st, 1862.

N. S. DAVIS,

Permanent Secretary.

We would call the attention of our readers to the above notice. The meeting of the Society was postponed last Spring, on account of the extreme excitement then existing in reference to the rebellion, that had at that time only just begun. But the first excitement of war has now passed, and there is no good reason why the profession should not resume its customary work, and renew, even more vigorously, all its former efforts for improvement. It is true that many active members of the Society are with our armies; faithfully striving to mitigate the evils of the camp and the battle-field; but this should only stimulate those who have remained at home, to greater exertions to maintain our social organizations, and to

push forward the spirit of inquiry and of progress in the profession. Jacksonville is a beautiful city, containing several public institutions of interest, and the local profession will spare no pains to make the meeting both pleasant and profitable. Hence we hope every local Society in the State will be fully represented in the meeting.

THE WOUNDED AT FORT DONELSON.—In obedience to notice from Gen. Payne, at Cairo, the Chicago Sanitary Commission provided six surgeons from this city for the relief of our gallant soldiers wounded at the battle of Fort Donelson; which number was afterwards swelled to eighteen surgeons and four nurses, by the action of the citizens. These gentlemen, among whom was some of our best surgical talent, went down to the scene of action on Tuesday, the 18th, and remained as long as their services were needed.

From Prof. E. ANDREWS, M. D., one of the number, we have received the following interesting letter, dated on the *Battle-Field at Fort Donelson*, February 20th, 1862:—

TO THE EDITORS OF THE CHICAGO MEDICAL EXAMINER.

GENTLEMEN:—The horrible effects of a battle can be but very partially alleviated by the resources of surgical skill. Nevertheless, all that is possible, is here being done for the wounded, both of friend and foe. Fort Donelson occupies a strong position on a hill 150 feet in height, at a bend of the Cumberland River. On the slope of the hill below, are two water batteries of great strength, to sweep the river, but the fort itself, aside from its position, is not strong. It is a hastily built earthwork for infantry, and not an elaborate fortification. It constituted the right wing of the enemy's position. Their rear was protected by the river, and their lines extended along the hills from Fort Donelson three or four miles, terminating at the left wing, on the river again. Along this whole distance, there was a continuous entrenchment. Opposite the right wing, there was a hill covered with rifle-pits, which overlooked and commanded the fort. Near the left wing,

there was also an eminence partly cleared of timber, overlooking the intrenchments. These two eminences became the chief point of contest, and the contour of the ground had a marked effect on the kind of surgical injuries produced. In looking over the bodies of the dead on the field, and at the wounded in the hospitals, I am struck with the great number of wounds in the head; and what at first appears strange is the fact, that some bullets traversed from above downward, parallel to the axis of the body. These peculiarities are explained by the fact, that in these hotly contested places, the men availed themselves of the shelter afforded by the rotundity of the hills, by lying flat upon the ground. In this position they loaded and fired a large part of the time, when not advancing or retreating. When raising the head to fire, that part was the only one exposed, and hence the only one at certain periods of the contest which received injury. As the men lay with the head towards the enemy, the peculiar wounds from above occurred, in consequence of this position. The coldness of the weather here prohibits the use of hospital tents as yet, except in extreme necessity, but the houses in the village of Dover, which is within the line, and the steamboats on the river furnish excellent temporary hospitals. The Confederate wounded have been mostly quartered in the houses, while our own men are being rapidly transported by boats to the general hospitals at Paducah and Mound City. This is a most fortunate circumstance, as they are thus removed from the army without the slightest jar or pain to their mangled limbs.

The Government has fitted up the large steamer *City of Memphis* as a floating hospital for this purpose. It is under the superintendence of Assistant Surgeon TURNER, formerly of Chicago. In the cabin, which is nearly two hundred feet in length, and in the state-rooms, the patients are crowded together, awaiting their departure down the river. About two hundred are now aboard, reposing on mattresses captured from the enemy.

Accurate statistics of wounds and operations are unattainable at the present time, but the following list showing the location and nature of a large number of injuries, will be of interest :—

Wounds of cranium,.....	14	Fractures of hand,.....	25
“ scalp,.....	19	Flesh wounds, “	11
“ eye,....	4	Wounds of chest, penetrating cavity, 10	
“ jaw,.....	4	“ “ not “ “	10
“ chin,.....	2	“ of back,.....	5
“ tongue,.....	1	“ of abdomen,	7
“ ear,.....	3	Fractures of hip,.....	7
“ mouth,.....	4	Flesh wounds of hip,	8
“ other parts of face,...	10	Fractures of thigh,.....	9
“ neck,.....	8	Flesh wounds, “	37
Fractures of shoulder,.....	13	Fractures of knee,.....	2
Flesh wounds of “	30	Flesh wounds, “	7
Fractures of arm,.....	16	Fractures of leg,.....	9
Flesh wounds of arm,.....	27	Flesh wounds of leg.....	27
Wounds of elbow,.....	4	Foot fractures,..	4
Fractures of forearm,.....	4	“ flesh wounds,	2
Flesh wounds of “	4	Powder burns,.....	3

The enormous preponderance, here shown, of wounds of the head is very striking, being 61 cases, including the injuries of the face, which is 17 per cent. of the whole list. If, now, we consider that these were all in hospital, while a large portion of those wounded in the head died at once on the field, and are not reckoned, it will be seen that this class of injuries was very numerous. The next most frequent wound was that of the thigh; constituting forty-six of the above list. I am entirely unable to account for the abundance of these cases. The dead generally lay upon their backs, unless their deaths were quite instantaneous. In the latter case they lay as they happened to fall. Hemorrhage on the field was not frequent, still a considerable number of cases occurred, and for days blankets and garments stained with blood, or spotted with brains were visible here and there, where the fight had been the fiercest. I saw even less secondary hemorrhage than primary, quite to my surprise. Very few bayonet wounds were inflicted, which indeed is the usual experience in war. Many cases showed the remarkable tendency of spherical bullets to pursue a tortuous course. This was rarely owing to a glance from the surface of a bone, which is mentioned in the books so prominently as a cause of deflection, but almost

always was due to the ball getting into the loose space between the deep and superficial fasciæ. This interfascial space is the favorite track of bullets, because it presents less resistance than either the deeper or more superficial tissues, hence the projectile slides along in it in the most remarkable manner. I saw one case, in which the bullet entered just above the elbow, and gaining this space, went up the whole length of the arm, followed over the curvature of the shoulder, and thence descended to the middle of the back, where it was cut out by an incision through the skin.

The concussion of slight wounds was sometimes remarkable. One man had his ear simply notched by a bullet, yet he fell to the ground and fainted for the time that the side of his head was torn off.

One soldier showed a remarkable mental condition, from a wound of the cranium. The bullet tore across the sagittal suture horizontally, notching both parietal bones, wounding the dura mater, and causing the loss of about half an ounce of brain substance. He has lost entirely the faculty of speech. The voice is not impaired, but he cannot moderate it into words and sentences. On trying to write, he shows the same inability to place language upon paper; yet he seems to retain his general intelligence, and perfectly recognizes his friends, with whom he is very cheerful.

Another man received a spent ball in the lower part of the forehead, just above the nose. The bullet was completely flattened, and on being picked out with the fingers, the skull beneath was found uninjured.

A young man received an oblique shot, entering the brain through the temporal bone. I trepanned him cautiously, removing the depressed bone, and he recovered for a day or two from his comatose condition, but has now relapsed, and will die in a day or two. Many of these brain wounds seem to do well for a few days, but they nearly all die in less than two weeks.

Lieut. Churchill, who I think is from Chicago, is wounded in both thighs. The first one was a flesh wound, received

during a *melee*, when some of the enemy were between him and his company. He started back upon the run, when a new shot fractured the opposite thigh. He fell on disputed ground, which was held 20 hours by the enemy, and during that time lay without succor. His feet were slightly frost-bitten; but he is doing well. Amputation of the fractured limb was not thought advisable.

The amputations here present a heavy mortality, in consequence of the shock of the injury which necessitated them.

The hospital steamer, *City of Memphis*, having received again a full cargo of wounded, is ordered to go down the river and discharge at Mound City General Hospital. It is high time; for the unavoidable over-crowding of the past few days has already caused the appearance of traumatic erysipelas among the cabin patients. The hospitals at Mound City are well kept, and very spacious; being capable of accommodating twelve hundred patients. Those at Paducah are also extensive, and well regulated. Several civil surgeons are now here, assisting in the care of the wounded. Most of them are doing good service, but as usual, a few incorrigible blockheads have thrust themselves in where they are not wanted. Cincinnati, St. Louis, Chicago, Springfield, and several other places, are all represented by men who have promptly responded to the call for help. Indeed, the supply is in excess of the demand, and only a portion of the men can be set at work.

Prof. HOLLISTER, of Lind University, is on the Ohio River, superintending the transport of convalescents from the general hospitals to various cities up the river. The military authorities seem to expect more severe battles soon, and are clearing out the convalescents to make room for future wounded.

We have on board the surgeon of the 30th Tennessee regiment—a prisoner. He assists with alacrity in taking care of the patients, and exercises the same impartial care over the wounded of both sides, which is the glory of surgeons in all civilized warfare. The animosity of the field, is not carried to the bedside of the wounded and dying.

E. A.

MEDICAL DEPARTMENT OF LIND UNIVERSITY — ANNUAL COMMENCEMENT.—The unexpected delay in the issue of the present number of the EXAMINER, enables us to announce the closing exercises of the third Annual Course of Instruction in this Institution. The exercises of the Public Commencement were held in the Lecture room of the College, on the evening of March 4th, 1862. The Lecture room was densely filled with ladies and gentlemen, and, notwithstanding the inclemency of the weather, the occasion was one of much interest. Rev. Dr. PATTERSON opened the exercises by prayer; and the Degree of Doctor of Medicine was conferred by the President of the Faculty, Prof. H. A. JOHNSON, on the following named gentlemen, viz :

Robert Addison, of Illinois.
H. K. Deen, of Indiana.
E. F. Dodge, of Wisconsin.
Joseph Haller, of Illinois.
S. Hemenway, of Oregon.
Geo. W. Jones, of Indiana.
A. G. Jones, “
E. H. Neyman, of Iowa.

A. D. Rouse, of Iowa.
G. W. Rohr, of Wisconsin.
E. B. Rockwell, of Illinois.
U. P. Stair, of Wisconsin.
J. F. Taylor, of Missouri.
J. M. Woodworth, of Illinois.
C. H. Bacon, “
O. F. Bartlett, of Wisconsin.

The Honorary Degree was conferred on Dr. F. R. PAYNE, of Marshall, Clark Co., Illinois. The President also announced that the Faculty had awarded the prize for the best Inaugural Thesis, to GEO. W. JONES, of Indiana, and that for the second best, to E. H. NEYMAN, of Iowa. After a brief charge to the Graduates, by the President, the Valedictory Address was delivered by Prof. J. H. HOLLISTER. The address to the graduates upon the “present developments around us, the demands made upon us in this age, as contrasted with ages past, and the particular requisites for successful medical practice,” was a well prepared effort, eminently worthy of the head and heart of its author. The advice to new practitioners was sound, calculated to raise the standard of the profession, and enforced with example and anecdote which will have the effect of impressing its lessons indelibly upon the minds of the class to whom it was directed.

After conclusion of the exercises, a pleasant reunion of the faculty, students and invited guests was held at the residence

of Dr. N. S. DAVIS, on Washington street, where refreshments were had, brief addresses were delivered, and general sociability prevailed.

OBITUARY.—It is with sincere regret that we learn the death of Dr. JOSEPH N. GRAHAM, of this city. Dr. GRAHAM was an intelligent, active, and highly esteemed member of the profession, and of the community. He began to suffer from the active symptoms of tubercular phthisis, some eighteen months since, and although their progress was partially arrested for a time by travel and change of climate, yet they soon returned, and speedily prostrated their victim. On the morning of the 3d of March, 1862, he sank peacefully to rest; leaving an interesting family, and a large circle of friends to mourn his departure. He was forty years of age. A more extended notice will be prepared hereafter.

HONOR TO AGASSIZ.—The London *Lancet* notices that the Copley medal, in the gift of the Royal Society, has been awarded by the Council to the celebrated AGASSIZ, thus setting the seal to the opinion which has so long prevailed of the merits of the distinguished professor. It is to be regretted that the date at which the Council necessarily make their decision, does not afford time for him to be present to receive the medal in person, at the anniversary meeting of the Society on St. Andrew's day.

PROPYLAMIN.—Propylamin is a clear, transparent liquid, having a pungent, ammoniacal, alkaline taste and smell. A feeling of causticity is produced when a portion is rubbed between the thumb and finger. It may be derived from a variety of sources,—from ergot, cod-liver oil, bone oil, human urine, etc., but most properly, for medicinal purposes, from herring pickle. When a quantity of old pickle is treated with a strong solution of potassa, a pungent odor like ammonia is evolved, which is propylamin liberated from its combination with an acid in the liquid. The neutral solution must be quickly distilled, and the process continued so long as the fishy odor is observed. The distillate is then saturated with hydrochloric acid, evaporated with much care to a dry crystalline mass, then treated with absolute alcohol, until the propylamin

salt is dissolved out. A second careful distillation with hydrate of lime affords a small portion of pure propylamin. I have found that nearly all that should be used for medicinal purposes comes over without the application of heat, or from slight warming. Imperfectly or unskilfully prepared, the remedy will prove worthless, while fresh specimens of *true* propylamin may possess great medicinal value.

The virtues ascribed to propylamin, in the cure of rheumatism and affections of a rheumatic origin, are extraordinary. Dr. Awenarius, of St. Petersburg, has treated (according to a notice translated by Prof. Proctor for the *Journal of Pharmacy*, from Bouchardat's *Repertoire de Pharmacie*) two hundred and fifty patients in the hospital of Kaulinkin, at St. Petersburg, between March, 1854, and June, 1856; and in acute cases the pain and fever *always disappeared the next day*. He regards it "as a true specific for the various affections of rheumatic origin." The diagnosis of these diseases being very often obscure, one can succeed (says M. Awenarius), by the use of propylamin, in bringing to light, in few days, the true nature of the malady. It is stated to have been employed in outside practice with equal success.

Although the claims for the new agent may be, and probably are, extravagant, still should it be found to have, in any measure, control over the specific disease for which it is recommended, it will indeed be a blessing to a suffering class of patients, and therefore merits a trial at the hands of the profession.

The remedy is prescribed in the following manner: R. Propylamin, gttss. xxv.; distilled water, fl. oz. vi.; and, when necessary, add oleo. sacch. peppermint, dr. ij. Dose—a tablespoonful every two hours.—JAS. R. NICHOLS, in *Boston Med. and Surg. Journal*.

STIMULANTS IN MILITARY HOSPITALS.—Common sense is a large ingredient in the paragraphs we append from *Special Order—No. 2*, issued by Brigade-Surgeon GEO. SUCKLEY, on taking charge of the General Hospital, Cumberland, Md.

"It is desired that, in future, patients in a failing condition will be *stimulated and fed* before they get too low; and it is ORDERED that no case be treated as hopeless until death has taken place.

"Stimulus and nourishment in many cases are our only wise medicaments. Food is our best tonic, stimulus gives tem-

porary strength for its digestion. Medical officers practising in the General Hospitals at this Depot, are recommended to combine fluid food with stimulus whenever practicable. Egg-nog, milk-punch, chicken broth, mixed with wine or spirits, are all far better than raw spirits and water, except when a rapid and sudden effect is desired.

“Perhaps there is no better test of a Physician’s ability than that afforded by his practice in the administration of stimulants. Nauseating, small spoonfuls frequently repeated, very soon become repulsive. Heroic doses at longer intervals are far better. For example: A small wine-glass of milk-punch administered every fifteen or twenty minutes, scarcely stimulates, and but feebly revives. The patient is incessantly annoyed by the attention and officiousness of his nurse; his rest is broken, and he soon becomes disgusted with the very smell of the mixture. On the contrary, a tumblerful, as near as practicable, given say once in two hours, rouses the whole nervous system; the pulse comes up, a short sleep is gained, the patient is nourished and refreshed.

“In conclusion, it is not only desired (as in paragraph 3) but strongly advised, that the physicians here employed will stimulate and nourish their patients before they run down too low; and not, as is frequently the case, follow an obvious indication only when the suffering patient is at the last gasp—thus justifying the remark once made by an old hospital patient, that he ‘never had seen a doctor give a patient brandy unless he was sure to die!’”

RESTORATION OF BONE.—The *Lancet* publishes the following interesting case of restoration of bone, read by M. Demeaux before the Academy of Sciences:—A young soldier had been wounded at Solferino by a musket ball, which had fractured the left superior maxillary. The day after the battle a surgeon extracted the projectile, together with several splinters of bone, in one of which three molars were firmly implanted. On examination, about half of the palatine roofing was found to be devoid of bone, the mucous membrane constituting the only wall of separation between the mouth and nose. In consequence of the want of solidity in the palate, the functions both of articulation and deglutition were impeded. Last summer, Dr. Demaux found the bony plate forming the roof of the mouth quite entire, and the impediment of speech and the inability to swallow had disappeared.

desire, however, to prejudge a question of so much importance, but earnestly seeking the welfare of sick soldiers, we deem it our duty to contribute to our legislators such information as may be in our possession, in the hope of aiding them in the formation of correct opinions as to the merits of the medical régime which they are urged to establish in our military hospitals.

This is not the first time that a government has been petitioned to recognize homœopathy, and grant it special privileges. Many European States have not only been thus petitioned, but have granted the prayers of the petitioners, and thoroughly tested its merits. The results of these trials will appear in the course of this article. Similar efforts to have public hospitals placed under their charge have also been made in this country by the partisans of Hahnemannism. On the occasion which we shall now notice, the whole subject was so thoroughly sifted, and the false pretensions of this system so completely exposed, that a quietus was put to their aspirations.

In the year 1857, a resolution was introduced into the Board of Governors of the Almshouse Department, New York, providing "that one-half of Bellevue Hospital should be set apart for the practice of homœopathy." A select committee was appointed to report upon the subject, of which the Hon. Washington Smith, one of the most intelligent civilians of the city, was chairman. The able Report, which this gentleman produced, bears evidence, on every page, of an unprejudiced review of the merits of the system, when thoroughly tested in hospital practice. We earnestly commend to the serious consideration of our HONORABLE SENATORS the following extracts from this report.

Alluding to the alleged claims of homœopathy on the ground of its popularity, the committee advance the following just opinions:

"That this system is wide-spread, and that it has adherents among the intelligent portions of the community, is an argument that applies with equal force to every system of medical empiricism. The opinion of a man of simply general intelligence, has properly no weight in regard to any new theory and its application to practice in any department of the arts or sciences. We should naturally look for a reliable opinion of the merits of such theory to the scientific cultivators of the art in which its application is proposed. Thus tested, the homœopathic system must utterly fail to receive our sanction. We appeal in vain to its adherents to point to a single medical man among its advocates in this city, whose scientific attain-

ments in his own profession would entitle his opinion to our confidence. In no department of science is there more activity in the investigation of the principles upon which it is based, more acuteness in observation, or better logic in the deduction of practical precepts from such principles and observations, than in medicine. And yet the records of science show that all those who truly advance the several departments of medicine, all, without exception, both in this and foreign countries, belong to the ranks of the so-called regular system."

But the Board was urged to grant the request because so many petitions were presented to them from respectable citizens. To this suggestion the Report replies:

"But whence do these petitions emanate? Do they come to us from the inmates of the hospital who are to be the subjects of the experiment? Do the sick who crowd the wards complain of the incompetency of the medical officers, and of the inefficiency of their treatment, and petition us to change their medical attendants, and introduce a new system of practice? Do these petitions even emanate from the honest laboring classes of our city, whom the vicissitudes of life and the misfortunes of poverty may at any moment remove to the wards of Bellevue for relief from their bodily ills? These are questions which the Board would do well to ponder before it acts."

The body of the Report consists of a careful collation of evidence bearing on the propriety of introducing this system of practice into public hospitals.

"But we are not left to simple conjectures as to the actual success of homœopathy as a system of medical practice. It is our duty, however, to inquire simply as to its success in hospitals; and on this head statistics are sufficiently numerous to prove its entire inefficiency and utter failure wherever it has been tried. The following statistics have been collected with care from authentic sources:—

"In 1829, by order of the King of Naples, a commission was appointed to test homœopathic remedies, under the following restrictions:—1. The Commission shall consist of two professors of the University of the Faculty of Medicine, two members of the Medico-Chirurgical Academy, two members of public instruction, and the heads of the hospital. 2. The Commission, after having proved the attenuation of the homœopathic remedies, shall place the said remedies in a strong box, firmly closed, with two different locks, the keys of which shall be returned, one to the Director of the Clinique, and the other to the commissioners charged with following the treat-

ment. 3. The clinical ward shall have but a single door, guarded by a sentinel; its internal arrangements shall be adapted to health; it shall not contain more than fifteen to twenty beds, and two assistant physicians, one chosen by the attending physician, the other by the commissioners, who shall keep an exact register of all that happens to the patients, the changes in their diseases, their regimen, cures and deaths, if any die. 4. The admission of patients affected with acute or chronic diseases, shall be left to the choice of the attending physician and commissioners, with this condition, that the attending physician shall not be obliged to take patients known to be incurable; nor shall diseases equivocal be considered proper for positive experiments. 5. The commissioners having selected the class of diseases, the attending physician shall make known the symptoms, administer the remedies, and prescribe the regimen. 6. Each day the condition of each patient shall be determined by the attending physician and commission. The result of this trial of forty days of homœopathic treatment under the observation of the commission named by the King of Naples, was the conclusion that not only is this treatment of no effect, but that in certain diseases it has the inconvenience of preventing the employment of remedies capable of effecting a cure. The physician in attendance was M. de Horatus, author of a homœopathic work, and who had boasted of the most marvellous cures.

“Clot-Bey, Physician-in-Chief to the armies of the Viceroy of Egypt states (*Annal. de la Med. Physiolog.*, Sept. 1834, *Ency.*, Decr. 1834) that a German homœopathic physician petitioned the Council of Health to try this system in the Hospital of Cairo, alleging its cheapness, etc. He was allowed to select, and chose patients suffering from ophthalmia and dysentery.—The Council were convinced from this experiment that the Homœopathic system was not entitled to their confidence. The following is the conclusion of the Report of the Council of Health: That the cures obtained were due simply to the hygienic and dietetic treatment adopted, and not at all to the infinitesimal doses. So unsuccessful did this trial prove, that the homœopathic practitioner was obliged to abandon the country.

“In April, 1843, a ward with thirty beds in the Hotel Dieu de Lyon was placed in charge of M. Guerard, the most distinguished homœopathic physician of that city, with liberty to select his patients. He selected fifteen, suffering from febrile affections, pneumonias, erysipelas, catarrhs, etc. He visited them daily, and in presence of sixty students and sev-

eral physicians, examined, prescribed homœopathic remedies, and directed the regimen. The experiment continued seventeen days, when the physician voluntarily retired. During this time there was no improvement in the patients, nor advantage gained which could be ascribed to the homœopathic treatment. The physician attributed his failure to the action of deleterious miasma *always existing in hospitals*, and from which he could not protect his patients. He acknowledged that the remedies which produced such powerful effects in private practice, utterly failed in hospitals, owing to the emanations from the bodies of persons collected together, which neutralized the infinitesimal doses.—*Gaz. Méd. de Paris, Ency.* Nov. 1833.

“In 1834, M. Andral employed homœopathic remedies in one hundred and forty cases, in the Hospital de la Pitié of Paris. The arrangements of the ward, the regimen of the patients, and all the details of treatment, were carefully managed according to the directions of Hahnemann. The remedies were all obtained from the most eminent homœopathic apothecary in Paris, and administered with the most religious exactness. The result of this trial proved the entire inefficiency of the remedies employed. It was found necessary in most of the cases to resort finally to the regular treatment.—*Bull. Gen. de Therapeut.* 1834.

“In 1835, the Homœopathic Society of Paris petitioned the authorities to establish a Homœopathic Hospital and Dispensary. The minister referred the matter to the Academy of Medicine, which appointed a Commission to draw up a report. This Commission reported in substance as follows: That they had submitted the system of homœopathy to the most rigid tests in practice, without obtaining any other than negative results, so far as the action of remedies was concerned; while observation proved that great dangers were liable to follow its adoption in severe diseases, from the neglect of proper and reliable remedies. If the authorities yielded to this request, the advocates of Mesmerism, animal magnetism, etc., were equally entitled to have hospitals opened for the trial of their peculiar systems, and thus every form of quackery would demand attention. They therefore advised that the petition be not granted. The Minister of Public Instruction, acting upon the advice of this Report, refused the petition.

“In 1829, the Czar of Russia ordered that the system of homœopathy should be tried in several military hospitals. For several years the practice was continued, and reports of

marvellous success were annually published, but it has entirely failed of obtaining the confidence of Government, and by a recent edict it is forbidden to practice homœopathy in the Russian territories.

"Homœopathy and allopathy were tried (*Ency. Jan.* 1836) in the Hospital of Fultschin for two months, with the following result:

	Entered.	Cured.	Died.	Remaining.
In Allopathic Hospital,	457	364	—	93
" Homœopathic "	129	66	5	58

"Piorry states that he has tried numerous experiments with homœopathic remedies in Hotel Dieu, all of which failed."—*Ency. Apr.* 1835, *Soc. Sav.* p. 88.

"Bally used homœopathic remedies four months in l'Hotel Dieu, with the following result:—pas un malade n'a été guéri par l'homœopathie."

"Dr. Guillott, of the Salpêtrière, gave six beds to the homœopaths, in 1849, for the treatment of cholera. Of seven cases treated, all died.—*Lancet*, 1849, v. 4, p. 542.

"The per-centage of mortality in the Homœopathic Hospital of St. Petersburg, 1833-34, was sixteen and two-thirds per cent.—*Ency. March*, 1835. *Rev. Med.* p. 41.

"Although homœopathy has existed nearly half a century and boasts of having overspread the civilized world, and received the special patronage of the wealthy of every community as well as a government sanction, it claims for itself to-day but seven hospitals in which it is practised on the entire continent of Europe; and within the last year or two several of these have been closed. The great Homœopathic Hospital of Vienna, which has published annually the most wonderful results of treatment, and as far as its reports gave evidence, was entirely successful, has recently ceased to exist.

"The Homœopathic Hospital at Leipsic, the home of the founder of this system, ceased with the death of Hahnemann. The London Homœopathic Hospital has recently closed its doors.

"But we need not multiply facts of this kind: enough has been given to prove to the entire satisfaction of your Committee, that this system has been thoroughly tested in hospitals, and found entirely inefficient. It is quite true that hospitals established by its partisans have published reports of the most flattering success of treatment, but they must be rejected in this discussion, because partisan. If such reports are reliable, why the failure of these very hospitals? Why is the homœopathic system expelled, not only from the hospitals of Russia,

in which it has had years to establish itself, but even from the Czar's dominions?

These are questions of grave import, and may well give rise to the inquiry in this community, Why are the sick poor of our city, selected to be made the subjects of an experiment with this system of medical practice which has so repeatedly failed when put to test of rigid investigation? If the curiosity of the few *must* be gratified, why not choose the criminal for the experiment?"

With such facts before them, the Committee came to the following conclusion:

"The just pride of every civilized and Christian community is its public charities. They are not only the criterion by which we may estimate its Christian philanthropy, but also its progress in the arts of civilized life. Well may the citizens of London, of Paris, and other continental cities boast of their hospitals, the growth of centuries, and the merited recipients of public and private endowments. To them flock the students of every country, and from them emanate men learned in the laws of health and disease, and skilled in all the subtle arts of healing. They are demonstrating with mathematical exactness the fact, that wisely and judiciously managed, the average of human life may be materially lengthened. So important, indeed, have they become to the well-being of the people, that they are incorporated with state and city governments. Well may we, under whose fostering care the public charities of our city are placed, inquire what is the character of the medical officers under which these hospitals have attained such celebrity! The answer, without exception is, that they are of the same school of education and practice as that under the management of which Bellevue Hospital has for the last ten years so signally prospered. They have been men of professional learning, eminent as citizens, and often as statesmen, but always of one school—the so-called regular practice."

No unprejudiced mind can review such facts, without concluding that public authorities who deliberately consign the helpless and confiding sick to the charge of medical men, practising a system so inefficient, incur a fearful responsibility. And that responsibility assumes a tenfold importance when the sick, who are to be subjected to this experiment, are the citizen soldiers who have sacrificed the comforts of home in defence of their country. Around them Government should throw its protecting care, and tenderly guard their sick beds from the ruthless hand of medical charlatanism.

CHLOROFORM OR ETHER.

Reprinted from the *London Lancet*.

Fifteen years have just been completed since the first capital operation was performed upon a patient who had been subjected to the influence of an anæsthetic agent. This was done by Professor Hayward at the Massachusetts General Hospital on November the 17th, 1846. The operation performed was amputation above the knee in a female. Previous to this undertaking, Dr. Morton had extracted a tooth, and Dr. Warren had removed a nævus from the face, under the same circumstances. The dates of these operations were September 30th and October 16th, preceding the time of Professor Hayward's venture. The anæsthetic agent employed upon each occasion was sulphuric ether. Since that period until the present time anæsthetics have been in constant use, and for all sorts of purposes where the induction of insensibility to pain is desired, and the arrest of convulsive and spasmodic movements sought for. We have seen it employed in lithotomy, in tetanus, in cases of poisoning by strychnia, in whooping-cough, and in parturition. Teeth are removed without pain by its aid, and we have witnessed the most urgent vomiting of pregnancy arrested by its application along with that of opium to the epigastrium. The uses of anæsthetics, indeed, are manifold. It is not surprising, then, that several agents should have been recommended as endowed with superior soothing and benumbing powers. Of them, however, ether and chloroform have alone kept the field. Of amylene we do not hear anything now, and we presume that keroselene, the last candidate for favor, will soon be forgotten. Whether the first two will continue to occupy the field, or whether one will finally displace the other, and which will be the conqueror, are points upon which it would be now premature to decide. Ether is not employed as an anæsthetic agent to any extent in Great Britain nor in many parts of Continental Europe. Here chloroform is used. But, upon the other hand, ether is habitually exhibited at Lyons and Naples, and is the only anæsthetic administered in the principal hospitals of the United States of America. And what are the reasons given for the adoption of each particular agent by its employers? "We use ether in preference to chloroform," say the advocates of

the former, "because it never kills." "We prefer chloroform to ether," urge the partizans of ether, "because it is quicker and surer in its action, more agreeable to breathe, and more portable to carry." "We deny that these asserted advantages of chloroform are so prominent as you maintain. Nor is ether so decidedly innocent as you affirm." "Ether," replies Professor Hayward, "is, I am confident, a perfectly safe anæsthetic agent. I have not been able to find any well-attested case of death from its inhalation. There may have been such, but they have never come to my knowledge, though I have taken unwearied pains to obtain information on this point.—I have given it in several hundred cases, and witnessed its exhibition by others in as many more. I have administered it to infants not three weeks old, and to persons more than three-score years and ten, and have never in a single instance seen an alarming or distressing effect produced by it." The surgeons of Lyons declare, "that since the adoption of ether in place of chloroform, the necrology of anæsthesia has not received an additional instance" in their city. Signor Palaschiano, of Naples, maintains it to be "infinitely safer than chloroform;" and in Mr. Erichsen's work it is affirmed of ether that "no death has yet resulted from its use."

As we before stated, fifteen years have past since the contest began, and it cannot be considered to be yet settled. Some nine or ten months since we laid before our readers the intention of the Boston Society for Medical Improvement to appoint a Committee "to investigate the alleged deaths from the inhalation of sulphuric ether, and to report thereon." The desire of our American brethren to arrive at a conclusive judgment upon an important question connected with anæsthetics was widely made known to the profession, in order that the latter might give all possible assistance. The Committee has just issued its Report.* It commences, after a few prefatory remarks, with the following preamble:—

"When the subject of chloroform first came under discussion, its dangers were commented upon, and even then freely acknowledged. It had not been two months introduced, when 'a well developed girl of fifteen' died from its administration for the evulsion of a toe-nail, 'the process of inhalation, operation, and death, not having occupied more than 5 minutes.' Since that time deaths from its use have repeatedly occurred. On the other hand, fatal results from ether, although still fig-

* Report of a Committee of the Boston Society for Medical Improvement on the Alleged Danger which accompany the Inhalation of Sulphuric Ether. pp. 36. Boston, 1861.

uring in the statistics of mortality from anæsthetics, are everywhere admitted to be infrequent. Indeed, the opinion has been expressed by various authorities both in America and Europe, that a death really attributable to the inhalation of sulphuric ether is yet to be reported. The correctness of this opinion has, however, been repeatedly denied, and the strong conviction of the absolute safety of this agent which exists in some localities in this country is thought to have its foundation rather in the desire that the fact might be established, than in the proof that it was so. Of course no one intends to say that a person cannot be killed by ether. The inhalation of its vapor without a sufficient admixture of oxygen destroys life by asphyxia. This may happen, and unfortunately has happened, but such an event cannot be laid to the anæsthetic, since in such a case it is the method of administration, and in no sense the ether which causes the fatal result. It is the purpose of this Report to solve the doubt just implied with regard to the absolute safety of sulphuric ether, and to investigate the dangers of its use as compared with chloroform.”—(p. 3.)

After having considered what conditions and precautions are necessary in bringing about a state of insensibility by the employment of ether, and what phenomena of etherization have an apparent or real danger, the Committee next undertake to prove that, these conditions being fulfilled, “sulphuric ether is of all anæsthetic agents alone worthy of unlimited confidence.” This is a simple and bold statement, and could it be received without demur—which we think it cannot, after perusal of the Report before us,—chloroform, the anæsthetic most in vogue, would gradually be displaced. The Boston umpires maintain that, with unequalled facilities to examine the literature of the subject under discussion, with all the chief foreign and American Journals at hand, and the results of a most extensive distribution of circulars, no case of which they have knowledge can be cited as *unquestionably* and *unavoidably* fatal from the inhalation of pure sulphuric ether. The whole number of alleged deaths from this agent collected by the Committee is forty-one, and some details of each case are given in the appendix; references are also made to other instances of death stated to have been in any way connected with the inhalation of ether. Now all these examples are rejected by the Reporters as failing to prove that the ether was necessarily the cause of death, because not one is limited by those conditions which they consider as essential to any case of death fairly attributable to the inhalation of an anæsthetic agent. These conditions are—1st, that death should

occur while the patient is actually in an anæsthetic state ; 2d, that its occurrence should be inexplicable by any phenomena of disease or operation. Now out of forty-one cases detailed, sixteen survived the operation from three to sixteen days ; whilst in seventeen cases, where death was immediate or nearly so, the Reporters regard the connexion between the result and the inhalation as “problematical or else manifestly absurd and unfounded, except in four instances where it is due to asphyxia, brought about by wholly avoidable causes.” The remaining cases of the table “are no better able to stand the test of examination,” and hence the Boston Committee have determined that their careful search “furnishes not a single conclusive case of death from the proper inhalation of sulphuric ether” (p. 12).

We have not the least doubt but that the Boston Committee has believed itself justified in coming to this decision. We, upon the contrary, think it has mystified itself in a maze of special pleading and assumption. The same desire to seek for a more recondite cause of death than that by ether, applied to the fatal cases from chloroform, would equally acquit this agent also, and explain away half of its alleged mortality. The details of many of the cases given in the Report are, no doubt, of such a kind as to show that the inhalation of ether was probably not unavoidably and unquestionably the cause of death unhelpt by contingent circumstances. But may not the same thing be said of the recorded deaths from chloroform ? Further, the perusal of other cases cannot but lead the unprejudiced mind to think that to the ether, and the ether alone, is the fatal event to be attributed. Only let the word *chloroform* be substituted for *ether* in these instances, and the Boston Reporters would not have much hesitation in assigning the cause of death. We do not think, then, that our American *confreres* have by any means proved the perfect innocuousness of ether. They have published, however, a very interesting Report.

UTERINE HÆMATOCELE.

(Continued from page 44.)

Reprinted from WEST on the *Diseases of Women*.

There are *four conditions* with which this *uterine hæmatocele* may be *confounded*: viz: extra-uterine pregnancy, retro-

version of the pregnant uterus, inflammation of the cellular tissue between the uterus and rectum, and ovarian tumor; and the points of similarity between each of these are quite sufficient to lead very readily into error. The suppression of the menses, the abdominal or pelvic discomfort, and the sense of bearing down backwards, are symptoms common to effusion of blood behind the uterus, and to an extra-uterine foetation between the second and fourth months; while the general contour of the tumor is very similar in the two cases, and there is the same remarkable pulsation of the vessels distributed to it in both. The attacks of pain in the extra-uterine foetation are, however, usually more intense and more paroxysmal, while the discomfort in the intervals is less; the sanguinous discharge is absent, and the uterus, if examined with the sound, is ascertained to be increased in size; and even without it the condition of the os uteri and portio vaginalis of the cervix, with the puffy lips, the closed orifice, and the swollen tissue, differs widely from the completely undeveloped state of those parts in cases of hemorrhage about the womb.

The effusion when considerable may cause, as it did in the case which I have related, complete retroversion of the womb, a condition which, when associated as it is sometimes with suppression of the menses for two or three months, may raise the suspicion of pregnancy, and lead to the tumor being taken for the fundus of the enlarged and misplaced uterus. Professor Cr  d  , of Berlin, relates an instance in which these very circumstances led him for a moment into error, and in which he endeavored vainly to replace what he supposed to be the pregnant and retroverted womb. Further observation soon led him right, and the same considerations as rectified his diagnosis may keep us from error. The cervix and os uteri presented none of the changes of pregnancy; the bladder was not affected; and the uterine sound, which entered readily in the natural direction, could not be turned round with its concavity backwards, nor be made to enter the tumor, intimately though it seemed connected with the womb.

The characters of the tumor in cases of inflammation of the uterine cellular tissue very closely resemble those of uterine h  motacele, and the history and symptoms present a very marked analogy in the two affections. There are, however, some points of difference between them which are generally sufficiently marked to preserve the attentive observer from error. Pelvic abscess is very generally the consequence of delivery or of abortion, while it is scarcely ever associated with any other form of menstrual disorder than its *sudden* suppression;

the inflammatory symptoms developing themselves directly out of that accident. Uterine hæmatocele, on the contrary, is seldom the *immediate* consequence of a single suppression of menstruation; it is not unfrequently preceded by menorrhagia, and is often accompanied, at any rate for a time, by a copious sanguineous discharge, a symptom which never attends upon inflammation of the cellular tissue in the vicinity of the uterus. Moreover, the tumor consequent on inflammation is at first very firm and resistant, and becomes soft only by degrees with the advance of suppuration. The tumor of uterine hæmatocele, on the contrary, is soft at first, and becomes more resistant in time, as the fluid elements of the blood are partially removed, while at no period are there the same thickening and induration about it which are so remarkable in that part of the vaginal wall adjacent to any collection of matter.

Ovarian cysts occupy, when small, the same situation as uterine hæmatocele; they are not, however, so sudden in their occurrence, nor so rapid in their increase; while, though their development is often associated with menstrual irregularity, they are not attended by any constant sanguineous discharge. The ovarian tumors, too, do not descend equally low into the recto-vaginal pouch, and consequently do not produce the same difficulty in defecation, while, further, they are not so intimately connected with the uterine wall, and the womb can usually, by means of the sound, be completely isolated from the adjacent swelling.

The number of instances of this affection hitherto observed is scarcely sufficient to enable us to determine accurately the degree of danger attaching to it, any more than the comparative frequency of the intra and extra-peritoneal variety of the hemorrhage. Including the four cases which came under my own observation, I can find some account, though often very meagre, of 41 instances of uterine hæmatocele, 33 of which terminated in recovery, 8 in death; or, in other words, the deaths were in the proportion of 19.5 per cent. of the total number of cases. In one of the fatal cases death took place from phthisis, and was therefore the indirect rather than the immediate result of the affection; twice it resulted from loss of blood, which, however, was in one of the instances due to the accidental wounding of a vessel of the cervix uteri; once it took place under the symptoms of pyæmia, and in the remaining four instances was produced by peritonitis of a rather chronic kind; the patient surviving a month in one case, forty-five days in another, four and a half months in the third, and seven and a half months in the last.

There can, I apprehend, be little doubt but that the real fatality of this affection is considerably less than would appear from our present imperfect data. On the one hand, some of the cases, such as that of M. Bernutz and of Piogey, have been reported as pathological rarities; and, on the other, many which have had a favorable issue have been unrecorded. Many, too, have unquestionably passed unrecognized; for the disposition to the spontaneous absorption of the effused blood, unless the quantity poured out has been enormous, seems to be very great, and menstrual disorder and abdominal pain have probably often passed away without a suspicion having arisen of their connection with hemorrhage around the uterus, or into the cavity of the peritoneum. Still, every allowance being made for the influence of these circumstances, uterine hæmotecele must, I imagine, be always regarded as an accident of a much graver kind than mere inflammation of the cellular tissue in the neighborhood of the uterus, or of its appendages.

In the *treatment* of this affection two different modes of procedure have been advocated, of which one is the expectant plan; while early interference and complete evacuation of the sac are the principles of the other. The statistics of the two methods yield the following results:—

Treated on the expectant plan	14	Recovered	11	Died	3
“ by puncture . . .	27	“	22	“	5
	41		33		8

but from such slender data I should hesitate to draw any conclusion. I imagine, indeed, that neither plan can be regarded as absolutely the best, but that the special circumstances of each case must guide us. In three of my cases, that alone excepted in which the effusion had already become a chronic evil, the puncture was followed by peritoneal inflammation, which was once of great severity; and the existence of an opening in the vagina did not in that instance prevent the establishment of a communication with the bowels and the discharge of a large quantity of blood per anum. In some instances, too, the fibrin of the blood forms, by its coagulation, a thick layer within the sac, and prevents the escape of the fluid contents after puncture with the trocar; while the enlarging the opening with a bistoury seems to be free neither from the dangers of hemorrhage on the one side, nor from those of inflammation of the cyst on the other. The complete emptying of the cyst, its subsequent washing out with water,

and the injection of a solution of iodine into it, as practised by M. Velpeau and advocated by M. Robert, appear to me hazardous proceedings, except when resorted to quite in the chronic state of the affection, when all disposition to hemorrhage has ceased, and the susceptibilities of the cyst wall have become blunted by the lapse of time.

In the earlier stages of the affection, absolute rest, local depletion, and the ministering to each symptom as it occurs, are the indications which we should endeavor to fulfil; while the presence of a tumor even of considerable dimensions, or even its increase to some extent after its first discovery should not, I venture to think, lead us to puncture it, apart from some very serious ill, or suffering clearly attributable to it. In the event of puncture being obviously necessary, a Pouteau's trocar would appear to be the safest and most manageable instrument to employ, and was used in all of my cases. In none of these, however, it must be admitted, was the escape of the blood immediate; but I should imagine that the use of a curved trocar and canula of the thickness of one's finger, such as I have employed to puncture ovarian cysts, *per vaginam*, would obviate the inconvenience with less risk would be incurred by the use of the knife. After puncture, the great hazard seems to be that of the supervention of inflammation, and my own experience leads me to regard this as very considerable, though it was controlled in each instance by active treatment.

Further experience may very possibly modify some of the views I have just now expressed, and may show that the balance inclines greatly in very early interference in these cases. I may just add, however, that the opinions of M. Nélaton appear to lean even more decidedly than at first they did towards the adoption of an expectant plan of treatment, and to leaving to nature alone the removal of the blood, even though poured out in great abundance.

Book Notices.

A SYSTEM OF SURGERY: Pathological, Diagnostic, Therapeutic, and Operative. By SAMUEL D. GROSS, M. D., Professor of Surgery in the Jefferson Medical College of Philadelphia, etc., etc. Illustrated by twelve hundred and twenty-seven engravings. Second edition, much enlarged and carefully revised. In two volumes. BLANCHARD & LEA: Philadelphia. 1862.

An unanimous verdict of praise from the medical profession

of every civilized country, is not often accorded to any living author. Not until the shining wand of the angel Azrael has bound with its silent spell, the busy brain, do we usually give to our Hunters, our Sydenhams and our Rushes, the just meed of their labors. At best, while alive, a foreign popularity, the alien tribute of a "contemporaneous posterity," is the least rarely granted,—as though distance, if but of space, were absolutely necessary to the proper appreciation of intellectual greatness. The Pyramids may not be judged by him who stands in their shadow.

But to the eminent surgeon, whose volumes lie before us. Fame has not been tardy. His own countrymen have not left it to other nations to discover his claims to pre-eminence; and other nations, with a generous speed, have hastened to confer upon him the merit of the soundest, the *first* surgical authority of his time. And the glory is reflected from the professor to the profession,—so that, despite the carping sneer against the New World and its people, which Sydney Smith moulded into an historic query,—American surgery is, to-day, head and shoulders above its brethren of France and Great Britain, as well in vastness of resources as in careful and scrupulous conservation of limb and life. And Prof. Gross is the chosen and approved exponent of the American system,—rapidly becoming, through this, his *magnum opus*, the cosmopolitan.

That a new edition should so soon be called for, is not, to us, so surprising, as that so much, valuable and interesting, could be found to add to its pages. Every chapter has been revised, introducing a large amount of new matter, all of an essentially practical character; and the illustrations have been increased from nine hundred and odd, to over twelve hundred. The subject of *Gunshot Wounds*, so fearfully important, at this time, has received especial attention, and this section is now one of the fullest and most practical in the book. In fact, we know of no one work that can at all compete with this, in value and importance to the military surgeon, as well as to the general practitioner and surgeon in civil life.

The familiar and popular text-book of ROBERT DRUITT de-

rives one of its chief advantages, according to an eminent reviewer, from "the fact that it was first written when the author was still a student, before he had his own particular experience to relate, and was willing and desirous of writing down simply the principles and practice of general experience." The work under consideration derives its chief value from a directly opposite fact, *i. e.*, that it is the fruit of a third of a century's study and experience, the ripe harvest of a rare combination of excellent judgment, extensive and enlightened research, and varied practical observation. That the intentions of the author, as shadowed forth in the following extract from the preface to the first edition, have been fully carried out, its popularity and wide-spread reputation fairly prove:—

The object of this work is to furnish a systematic and comprehensive treatise on the science and practice of surgery, considered in the broadest sense; one that shall serve the practitioner as a faithful and available guide in his daily routine of duty. It has been too much the custom of modern writers on this department of the healing art, to omit certain topics altogether, and to speak of others at undue length, evidently assuming that their readers could readily supply the deficiencies from other sources, or that what has been thus slighted is of no particular practical value. My aim has been to embrace the whole domain of surgery, and to allot to every subject its legitimate claim to notice in the great family of external diseases and accidents. How far this object has been accomplished, is not for me to determine. It may safely be affirmed, however, that there is no topic, properly appertaining to surgery, that will not be found to be discussed, to a greater or less extent, in these volumes. If a larger space than is customary has been devoted to the consideration of inflammation and its results, or the great principles of surgery, it is because of the conviction, grounded upon long and close observation, that there are no subjects so little understood by the general practitioner. Special attention has also been bestowed upon the discrimination of diseases; and

an elaborate chapter has also been introduced on general diagnosis.

The publishers have faithfully done their share in the production of an American volume of which we are all proud. The type, though smaller than in the first edition, is beautifully clear and distinct, the illustrations are excellent, both in the engraving and printing, and the binding is strong and substantial. By the use of the smaller type, the increase of matter is admitted, with no additional bulk,—indeed, the present volumes are less cumbrous than the old ones, and number some two hundred pages less.

VALEDICTORY to the Graduates of Rush Medical College, February 5th, 1862.
By J. W. FREER, M. D., Professor of Physiology and Surgical Anatomy.

We acknowledge the receipt of a neatly printed copy of Prof. FREER's *Address*, delivered as above.

About all has been, that can be said on such occasions, and he must be a genius who shall advance something new. But words of advice so earnest, sound and sensible as these, are always in season; and if they should lack the "unwholesome charm of novelty," are not the less valuable or acceptable.

The following points are extremely well put:—

The strong point of the charlatan and quack is in social chicanery and blaring demonstrations of what he has done and can do; the strength of the educated medical man is in his knowledge, gathered by such assistants as these—interrogating nature and demanding possession of its arcana. There is more real power in the microscope and the test tube than in the whole army of empirics, from the first quack who said: "Ye shall not surely die," to the last and meanest follower of Hahemann, who repeats to his deluded dupes a similar promise. * * * *

You are scrupulously to avoid, at all times and on all occasions, any and all disreputable professional associations; but grapple to your breasts, with hooks of steel, every upright, intelligent and high-minded physician—for in union there is strength. And alas! it is for want of this union—particularly in our own country—that our noble and beneficent calling has been measurably shorn of its sacredness—has been drabbled and dragged in the dust by every aspiring knave—until (I

blush to say it) the public have come to look upon pretension as the measure of qualification, and a gaudy tin sign, with staring hieroglyphics, as equal to a diploma from the most renowned institution of the world! Look to it, then, that you guard sacredly the honor and interests of your acknowledged professional brethren, for in doing thus, you will compel public respect, by convincing them that we are not a band of wranglers, but on the contrary harmoniously engaged in the completer development of principles embracing in their scope the highest temporal interests of the human race. * * *

The charge is frequently made that medicine, as a science, has been undergoing constant mutations. If by this, it is intended that it is a progressive science, we admit it freely; it is the glory of the profession. But, if by this, it is intended that it has been a history of contradictions—we repel it as begotten either of calumny or ignorance. Methods of accomplishing results have varied and will continue to vary, as men and times, seasons and surroundings change.

The objects sought by Hippocrates, we still seek to-day, and will continue to seek during all coming time. Powers and Turner may, and probably do adopt different methods of giving shape to their glowing ideals, from those adopted by Praxiteles and Appelles; but the same eternal principles vitalize all their creations. You may rest assured that were Hippocrates now living, he would be the disciple of no pathy or—ism—even to secure admission to the luxurious apartments of the hysterical or dyspeptic votaries of infinitesimal triturations.

RELIGIO MEDICI, A Letter to a Friend, Christian Morals, Urn Burial and other Papers. By Sir THOMAS BROWNE, Kt., M. D., Boston: TICKNOR & FIELDS. 1862.

The house of TICKNOR & Co. has done more to give us a good literature, by the sterling character of its books, its generous dealing with authors at home and abroad, and the artistic and mechanical perfection of its work, than any other house in our country. Their blue and gold books, started years ago with *Tennyson*, was a stroke of genius as rare as the power to write a poem; they could no more help being popular than the June roses can. Hosts of imitators bear testimony to their perfect beauty and fitness; and there is still only one house that can give us a blue and gold book.

This book is still better than any other yet printed, for our daily company, and it is just what we wanted. The old folios are buried in great libraries; the English octavos are very dear; Bohn's edition is of moderate price, but Sir THOMAS, like many a good man beside, wrote some as he was moved by the Holy Ghost, and some as he was moved by the publishers, and the present editor has carefully and reverently gathered one from the other. We suppose this octavo, in brown and crimson, 432 pages, printed on a generous paper, with a sweet portrait, quaint head and tail-pieces, exquisite initial letters, and running notes in the margin, is, to all other editions, what wheat clean sifted is to wheat in the stack. For some insight into the surpassing goodness of the book itself, the mingled wisdom, piety and learning, the enrions blending of medical and religious suggestion, written in honest, terse old English, we must send the reader to the book. For the younger and rising men in the profession, especially, we can suggest no book likely to be at once so wholesome and so welcome, as this of the good physician; one of whose *Resolves*, found in his common-place book, we here transcribe:—

“To pray daily, and particularly for sick patients, and in general for others, wheresoever, howsoever, and under whose care soever; and at the entrance into the house of the sick, to say, The peace and mercy of God be in this place.”

Editorial.

THE AMERICAN MEDICAL ASSOCIATION.

The time is drawing near when some action should be had concerning the Annual Meeting of the American Medical Association. In common with many others, we deemed it advisable that the last annual meeting should not be held. The country was at that time in a state of feverish excitement, and there were few who took a lively interest in anything but current events. Had the meeting been held, we doubt if a respectable number of our medical brethren would have been called together. But the condition of our civil

affairs has changed, and this change gives a new tone to the feelings and temper of the people. Business is beginning to resume its former channels, and citizens are returning with increased interest to their former pursuits. The question which we now propose to the medical profession is this: Shall not the American Medical Association hold its annual meeting at Chicago, on the first Tuesday of June next?

So far from the present condition of the country constituting reasonable ground for further postponement, there are several reasons which render a meeting of the Association at this time particularly desirable. The civil contest into which we have been unexpectedly precipitated, develops many new subjects of interest and importance, which it behoves the profession to consider. A host of topics relating to military surgery and hygiene are now, for the first time in our generation, brought home to us, and their careful consideration devolves upon the profession. There will be no dearth of topics which, in the present state of affairs, will spring up in the deliberations of the Association, and which no other organized body of the profession can so appropriately consider. We conceive that the Association owes a duty to the country, the profession, and to itself, which it can only discharge by holding a stated meeting, and remaining in session long enough to deliberate carefully on all the important matters which will come up for consideration. We know that we utter the sentiments of many, when we urge upon the officers of the Association to see to it that the regular meeting in June be seasonably announced.

We copy the above from the *American Medical Times* of February 22d; and fully endorse its sentiments. We think there has been no time in the history of the country, when our Medical Societies, both local and general, could be more useful than at present. We are glad to see that such State Societies as have recently held their annual meetings, have been well attended. For ourselves, we can say to our brethren elsewhere, that we shall greet them in our goodly city with the greatest pleasure. We trust, the proper notices will be issued by the Secretaries and Committee of Arrangements, without delay.

SUMMER COURSE OF MEDICAL INSTRUCTION IN THIS CITY.—The Medical Faculty of Lind University, will continue a regular course of instruction, to such students as remain in the

city, through the summer. The summer course will commence on the first Monday in April, and continue until the first Monday in August. It will embrace one regular *Clinical Lecture* each day, and one familiar lecture and examination on some branch of medical science. Four of the Clinics, each week, will be given in the Hospital, and two in the Dispensary; affording one of the best opportunities for obtaining direct bed-side instruction, in practical medicine, surgery, and the diseases of women and children, that can be found in our country. The hour devoted, each day, to a thorough examination of the class, with such familiar oral instruction as the subject may suggest, is more especially designed to aid the student in a course of systematic and profitable summer reading. This part of the course will embrace instruction in nearly all the branches of medical science. The whole summer course of instruction will be *free* to all who matriculate in the Medical Department of the University.

ILLINOIS STATE MEDICAL SOCIETY.—The Eleventh Regular Annual Meeting of the Illinois State Medical Society will be held at Jacksonville, commencing on the *first Tuesday* in May, 1862. It is very desirable to have a full attendance of delegates and members from all parts of the State.

CHICAGO, March 1st, 1862.

N. S. DAVIS,
Permanent Secretary.

We would call the attention of our readers to the above notice. The meeting of the Society was postponed last Spring, on account of the extreme excitement then existing in reference to the rebellion, that had at that time only just begun. But the first excitement of war has now passed, and there is no good reason why the profession should not resume its customary work, and renew, even more vigorously, all its former efforts for improvement. It is true that many active members of the Society are with our armies; faithfully striving to mitigate the evils of the camp and the battle-field; but this should only stimulate those who have remained at home, to greater exertions to maintain our social organizations, and to

push forward the spirit of inquiry and of progress in the profession. Jacksonville is a beautiful city, containing several public institutions of interest, and the local profession will spare no pains to make the meeting both pleasant and profitable. Hence we hope every local Society in the State will be fully represented in the meeting.

THE WOUNDED AT FORT DONELSON.—In obedience to notice from Gen. Payne, at Cairo, the Chicago Sanitary Commission provided six surgeons from this city for the relief of our gallant soldiers wounded at the battle of Fort Donelson; which number was afterwards swelled to eighteen surgeons and four nurses, by the action of the citizens. These gentlemen, among whom was some of our best surgical talent, went down to the scene of action on Tuesday, the 18th, and remained as long as their services were needed.

From Prof. E. ANDREWS, M. D., one of the number, we have received the following interesting letter, dated on the *Battle-Field at Fort Donelson*, February 20th, 1862:—

TO THE EDITORS OF THE CHICAGO MEDICAL EXAMINER.

GENTLEMEN:—The horrible effects of a battle can be but very partially alleviated by the resources of surgical skill. Nevertheless, all that is possible, is here being done for the wounded, both of friend and foe. Fort Donelson occupies a strong position on a hill 150 feet in height, at a bend of the Cumberland River. On the slope of the hill below, are two water batteries of great strength, to sweep the river, but the fort itself, aside from its position, is not strong. It is a hastily built earthwork for infantry, and not an elaborate fortification. It constituted the right wing of the enemy's position. Their rear was protected by the river, and their lines extended along the hills from Fort Donelson three or four miles, terminating at the left wing, on the river again. Along this whole distance, there was a continuous entrenchment. Opposite the right wing, there was a hill covered with rifle-pits, which overlooked and commanded the fort. Near the left wing,

there was also an eminence partly cleared of timber, overlooking the intrenchments. These two eminences became the chief point of contest, and the contour of the ground had a marked effect on the kind of surgical injuries produced. In looking over the bodies of the dead on the field, and at the wounded in the hospitals, I am struck with the great number of wounds in the head; and what at first appears strange is the fact, that some bullets traversed from above downward, parallel to the axis of the body. These peculiarities are explained by the fact, that in these hotly contested places, the men availed themselves of the shelter afforded by the rotundity of the hills, by lying flat upon the ground. In this position they loaded and fired a large part of the time, when not advancing or retreating. When raising the head to fire, that part was the only one exposed, and hence the only one at certain periods of the contest which received injury. As the men lay with the head towards the enemy, the peculiar wounds from above occurred, in consequence of this position. The coldness of the weather here prohibits the use of hospital tents as yet, except in extreme necessity, but the houses in the village of Dover, which is within the line, and the steamboats on the river furnish excellent temporary hospitals. The Confederate wounded have been mostly quartered in the houses, while our own men are being rapidly transported by boats to the general hospitals at Paducah and Mound City. This is a most fortunate circumstance, as they are thus removed from the army without the slightest jar or pain to their mangled limbs.

The Government has fitted up the large steamer *City of Memphis* as a floating hospital for this purpose. It is under the superintendence of Assistant Surgeon TURNER, formerly of Chicago. In the cabin, which is nearly two hundred feet in length, and in the state-rooms, the patients are crowded together, awaiting their departure down the river. About two hundred are now aboard, reposing on mattresses captured from the enemy.

Accurate statistics of wounds and operations are unattainable at the present time, but the following list showing the location and nature of a large number of injuries, will be of interest :—

Wounds of cranium,.....	14	Fractures of hand,.....	25
“ scalp,.....	19	Flesh wounds, “	11
“ eye,.....	4	Wounds of chest, penetrating cavity, 10	
“ jaw,.....	4	“ “ not “ “	10
“ chin,.....	2	“ of back,.....	5
“ tongue,.....	1	“ of abdomen,.....	7
“ ear,.....	3	Fractures of hip,.....	7
“ mouth,.....	4	Flesh wounds of hip,.....	8
“ other parts of face,....	10	Fractures of thigh,.....	9
“ neck,.....	8	Flesh wounds, “	37
Fractures of shoulder,.....	13	Fractures of knee,.....	2
Flesh wounds of “	30	Flesh wounds, “	7
Fractures of arm,.....	16	Fractures of leg,.....	9
Flesh wounds of arm,.....	27	Flesh wounds of leg,.....	27
Wounds of elbow,.....	4	Foot fractures,..	4
Fractures of forearm,.....	4	“ flesh wounds,	2
Flesh wounds of “	4	Powder burns,.....	3

The enormous preponderance, here shown, of wounds of the head is very striking, being 61 cases, including the injuries of the face, which is 17 per cent. of the whole list. If, now, we consider that these were all in hospital, while a large portion of those wounded in the head died at once on the field, and are not reckoned, it will be seen that this class of injuries was very numerous. The next most frequent wound was that of the thigh; constituting forty-six of the above list. I am entirely unable to account for the abundance of these cases. The dead generally lay upon their backs, unless their deaths were quite instantaneous. In the latter case they lay as they happened to fall. Hemorrhage on the field was not frequent, still a considerable number of cases occurred, and for days blankets and garments stained with blood, or spotted with brains were visible here and there, where the fight had been the fiercest. I saw even less secondary hemorrhage than primary, quite to my surprise. Very few bayonet wounds were inflicted, which indeed is the usual experience in war. Many cases showed the remarkable tendency of spherical bullets to pursue a tortuous course. This was rarely owing to a glance from the surface of a bone, which is mentioned in the books so prominently as a cause of deflection, but almost

always was due to the ball getting into the loose space between the deep and superficial fasciæ. This interfascial space is the favorite track of bullets, because it presents less resistance than either the deeper or more superficial tissues, hence the projectile slides along in it in the most remarkable manner. I saw one case, in which the bullet entered just above the elbow, and gaining this space, went up the whole length of the arm, followed over the curvature of the shoulder, and thence descended to the middle of the back, where it was cut out by an incision through the skin.

The concussion of slight wounds was sometimes remarkable. One man had his ear simply notched by a bullet, yet he fell to the ground and fancied for the time that the side of his head was torn off.

One soldier showed a remarkable mental condition, from a wound of the cranium. The bullet tore across the sagittal suture horizontally, notching both parietal bones, wounding the dura mater, and causing the loss of about half an ounce of brain substance. He has lost entirely the faculty of speech. The voice is not impaired, but he cannot moderate it into words and sentences. On trying to write, he shows the same inability to place language upon paper; yet he seems to retain his general intelligence, and perfectly recognizes his friends, with whom he is very cheerful.

Another man received a spent ball in the lower part of the forehead, just above the nose. The bullet was completely flattened, and on being picked out with the fingers, the skull beneath was found uninjured.

A young man received an oblique shot, entering the brain through the temporal bone. I trepanned him cautiously, removing the depressed bone, and he recovered for a day or two from his comatose condition, but has now relapsed, and will die in a day or two. Many of these brain wounds seem to do well for a few days, but they nearly all die in less than two weeks.

Lieut. Churchill, who I think is from Chicago, is wounded in both thighs. The first one was a flesh wound, received

during a *melee*, when some of the enemy were between him and his company. He started back upon the run, when a new shot fractured the opposite thigh. He fell on disputed ground, which was held 20 hours by the enemy, and during that time lay without succor. His feet were slightly frost-bitten; but he is doing well. Amputation of the fractured limb was not thought advisable.

The amputations here present a heavy mortality, in consequence of the shock of the injury which necessitated them.

The hospital steamer, *City of Memphis*, having received again a full cargo of wounded, is ordered to go down the river and discharge at Mound City General Hospital. It is high time; for the unavoidable over-crowding of the past few days has already caused the appearance of traumatic erysipelas among the cabin patients. The hospitals at Mound City are well kept, and very spacious; being capable of accommodating twelve hundred patients. Those at Paducah are also extensive, and well regulated. Several civil surgeons are now here, assisting in the care of the wounded. Most of them are doing good service, but as usual, a few incorrigible blockheads have thrust themselves in where they are not wanted. Cincinnati, St. Louis, Chicago, Springfield, and several other places, are all represented by men who have promptly responded to the call for help. Indeed, the supply is in excess of the demand, and only a portion of the men can be set at work.

Prof. HOLLISTER, of Lind University, is on the Ohio River, superintending the transport of convalescents from the general hospitals to various cities up the river. The military authorities seem to expect more severe battles soon, and are clearing out the convalescents to make room for future wounded.

We have on board the surgeon of the 30th Tennessee regiment—a prisoner. He assists with alacrity in taking care of the patients, and exercises the same impartial care over the wounded of both sides, which is the glory of surgeons in all civilized warfare. The animosity of the field, is not carried to the bedside of the wounded and dying.

E. A.

MEDICAL DEPARTMENT OF LIND UNIVERSITY — ANNUAL COMMENCEMENT.—The unexpected delay in the issue of the present number of the EXAMINER, enables us to announce the closing exercises of the third Annual Course of Instruction in this Institution. The exercises of the Public Commencement were held in the Lecture room of the College, on the evening of March 4th, 1862. The Lecture room was densely filled with ladies and gentlemen, and, notwithstanding the inclemency of the weather, the occasion was one of much interest. Rev. Dr. PATTERSON opened the exercises by prayer; and the Degree of Doctor of Medicine was conferred by the President of the Faculty, Prof. H. A. JOHNSON, on the following named gentlemen, viz :

Robert Addison, of Illinois.
H. K. Deen, of Indiana.
E. F. Dodge, of Wisconsin.
Joseph Haller, of Illinois.
S. Hemenway, of Oregon.
Geo. W. Jones, of Indiana.
A. G. Jones, “
E. H. Neyman, of Iowa.

A. D. Rouse, of Iowa.
G. W. Rohr, of Wisconsin.
E. B. Rockwell, of Illinois.
U. P. Stair, of Wisconsin.
J. F. Taylor, of Missouri.
J. M. Woodworth, of Illinois.
C. H. Bacon, “
O. F. Bartlett, of Wisconsin.

The Honorary Degree was conferred on Dr. F. R. PAYNE, of Marshall, Clark Co., Illinois. The President also announced that the Faculty had awarded the prize for the best Inaugural Thesis, to GEO. W. JONES, of Indiana, and that for the second best, to E. H. NEYMAN, of Iowa. After a brief charge to the Graduates, by the President, the Valedictory Address was delivered by Prof. J. H. HOLLISTER. The address to the graduates upon the “present developments around us, the demands made upon us in this age, as contrasted with ages past, and the particular requisites for successful medical practice,” was a well prepared effort, eminently worthy of the head and heart of its author. The advice to new practitioners was sound, calculated to raise the standard of the profession, and enforced with example and anecdote which will have the effect of impressing its lessons indelibly upon the minds of the class to whom it was directed.

After conclusion of the exercises, a pleasant reunion of the faculty, students and invited guests was held at the residence

of Dr. N. S. DAVIS, on Washington street, where refreshments were had, brief addresses were delivered, and general sociability prevailed.

OBITUARY.—It is with sincere regret that we learn the death of Dr. JOSEPH N. GRAHAM, of this city. Dr. GRAHAM was an intelligent, active, and highly esteemed member of the profession, and of the community. He began to suffer from the active symptoms of tubercular phthisis, some eighteen months since, and although their progress was partially arrested for a time by travel and change of climate, yet they soon returned, and speedily prostrated their victim. On the morning of the 3d of March, 1862, he sank peacefully to rest; leaving an interesting family, and a large circle of friends to mourn his departure. He was forty years of age. A more extended notice will be prepared hereafter.

HONOR TO AGASSIZ.—The London *Lancet* notices that the Copley medal, in the gift of the Royal Society, has been awarded by the Council to the celebrated AGASSIZ, thus setting the seal to the opinion which has so long prevailed of the merits of the distinguished professor. It is to be regretted that the date at which the Council necessarily make their decision, does not afford time for him to be present to receive the medal in person, at the anniversary meeting of the Society on St. Andrew's day.

PROPYLAMIN.—Propylamin is a clear, transparent liquid, having a pungent, ammoniacal, alkaline taste and smell. A feeling of causticity is produced when a portion is rubbed between the thumb and finger. It may be derived from a variety of sources,—from ergot, cod-liver oil, bone oil, human urine, etc., but most properly, for medicinal purposes, from herring pickle. When a quantity of old pickle is treated with a strong solution of potassa, a pungent odor like ammonia is evolved, which is propylamin liberated from its combination with an acid in the liquid. The neutral solution must be quickly distilled, and the process continued so long as the fishy odor is observed. The distillate is then saturated with hydrochloric acid, evaporated with much care to a dry crystalline mass, then treated with absolute alcohol, until the propylamin

salt is dissolved out. A second careful distillation with hydrate of lime affords a small portion of pure propylamin. I have found that nearly all that should be used for medicinal purposes comes over without the application of heat, or from slight warming. Imperfectly or unskilfully prepared, the remedy will prove worthless, while fresh specimens of *true* propylamin may possess great medicinal value.

The virtues ascribed to propylamin, in the cure of rheumatism and affections of a rheumatic origin, are extraordinary. Dr. Awenarius, of St. Petersburg, has treated (according to a notice translated by Prof. Proctor for the *Journal of Pharmacy*, from Bouchardat's *Repertoire de Pharmacie*) two hundred and fifty patients in the hospital of Kaulinkin, at St. Petersburg, between March, 1854, and June, 1856; and in acute cases the pain and fever *always disappeared the next day*. He regards it "as a true specific for the various affections of rheumatic origin." The diagnosis of these diseases being very often obscure, one can succeed (says M. Awenarius), by the use of propylamin, in bringing to light, in few days, the true nature of the malady. It is stated to have been employed in outside practice with equal success.

Although the claims for the new agent may be, and probably are, extravagant, still should it be found to have, in any measure, control over the specific disease for which it is recommended, it will indeed be a blessing to a suffering class of patients, and therefore merits a trial at the hands of the profession.

The remedy is prescribed in the following manner: R. Propylamin, gttss. xxv.; distilled water, fl. oz. vi.; and, when necessary, add oleo. sacch. peppermint, dr. ij. Dose—a tablespoonful every two hours.—JAS. R. NICHOLS, in *Boston Med. and Surg. Journal*.

STIMULANTS IN MILITARY HOSPITALS.—Common sense is a large ingredient in the paragraphs we append from *Special Order—No. 2*, issued by Brigade-Surgeon GEO. SUCKLEY, on taking charge of the General Hospital, Cumberland, Md.

"It is desired that, in future, patients in a failing condition will be *stimulated and fed* before they get too low; and it is ORDERED that *no case be treated as hopeless until death has taken place*.

"Stimulus and nourishment in many cases are our only wise medicaments. Food is our best tonic, stimulus gives tem-

porary strength for its digestion. Medical officers practising in the General Hospitals at this Depot, are recommended to combine fluid food with stimulus whenever practicable. Egg-nog, milk-punch, chicken broth, mixed with wine or spirits, are all far better than raw spirits and water, except when a rapid and sudden effect is desired.

“Perhaps there is no better test of a Physician’s ability than that afforded by his practice in the administration of stimulants. Nauseating, small spoonfuls frequently repeated, very soon become repulsive. Heroic doses at longer intervals are far better. For example: A small wine-glass of milk-punch administered every fifteen or twenty minutes, scarcely stimulates, and but feebly revives. The patient is incessantly annoyed by the attention and officiousness of his nurse; his rest is broken, and he soon becomes disgusted with the very smell of the mixture. On the contrary, a tumblerful, as near as practicable, given say once in two hours, rouses the whole nervous system; the pulse comes up, a short sleep is gained, the patient is nourished and refreshed.

“In conclusion, it is not only desired (as in paragraph 3) but strongly advised, that the physicians here employed will stimulate and nourish their patients before they run down too low; and not, as is frequently the case, follow an obvious indication only when the suffering patient is at the last gasp—thus justifying the remark once made by an old hospital patient, that he ‘never had seen a doctor give a patient brandy unless he was sure to die!’”

RESTORATION OF BONE.—The *Lancet* publishes the following interesting case of restoration of bone, read by M. Demeaux before the Academy of Sciences:—A young soldier had been wounded at Solferino by a musket ball, which had fractured the left superior maxillary. The day after the battle a surgeon extracted the projectile, together with several splinters of bone, in one of which three molars were firmly implanted. On examination, about half of the palatine roofing was found to be devoid of bone, the mucous membrane constituting the only wall of separation between the mouth and nose. In consequence of the want of solidity in the palate, the functions both of articulation and deglutition were impeded. Last summer, Dr. Demeaux found the bony plate forming the roof of the mouth quite entire, and the impediment of speech and the inability to swallow had disappeared.

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The author has not been insensible to the kindness thus bestowed upon his labors, and in revising the work for a new edition he has spared no pains to render it worthy of the favor with which it has been received. Every portion has been subjected to close examination and revision; any deficiencies apparent have been supplied, and the results of recent progress in the science and art of surgery have been everywhere introduced; while the series of illustrations has been enlarged by the addition of nearly three hundred wood-cuts, rendering it one of the most thoroughly illustrated works ever laid before the profession. To accommodate these very extensive additions, the work has been printed upon a smaller type, so that notwithstanding the very large increase in the matter and value of the book, its size is more convenient and less cumbersome than before. Every care has been taken in the printing to render the typographical execution unexceptionable, and it is confidently presented as a work in every way worthy of a place in even the most limited library of the practitioner or student.

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[NO. III

Original Contributions.

ARTICLE VIII.

OVARIAN TUMORS.

By WM. H. BYFORD, A. M., M. D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, IN THE MEDICAL DEPARTMENT,
LIND UNIVERSITY, CHICAGO, ILLINOIS.

V.—TREATMENT OF OVARIAN TUMORS.

It is not necessary to interfere, in any manner, with some cases of ovarian dropsy. Indeed, I think it would be nearly, if not always right to let all cases alone that did not threaten the life of the patient with material curtailment. There are many instances which advance slowly, or remain stationary for a great many years, and prove but an inconvenience. We would not be justified in active interference in these cases: much less should we do anything directly, for cases in which independent complications of a fatal character exist; *e. g.*, phthisis or cancer. When, however, the disease is making obvious progress, and particularly when the advance is sufficiently rapid to leave but little doubt of its proving fatal within the average time of their duration, we are bound to make every effort within our power to save or prolong, as much as possible, the life of our patient.

When treatment becomes necessary, and we cast about for remedies, we will find that there are two kinds of treatment, strongly distinguished from each other, applicable to certain

classes of cases respectively. General hygienic treatment is applicable to all; and this will consist, for the most part, in an abstinence from every thing that stimulates the ovaria, heated rooms, high living, lascivious practices, marriage, or if married, sexual intercourse and pregnancy; and the use of appropriate out-door exercise, proper diet, and, indeed, everything calculated to promote sound health, and an avoidance of all debilitating influences.

The two kinds of treatment alluded to are the *palliative* and the *curative*. The one intended to relieve, as far as possible, the sufferings of the patient under the disease, or to retard the rapidity of its progress; the other, to remove, or destroy the tumor, and thus do away with the cause of the evil entirely. When practicable, I think this last treatment is always desirable; when not practicable, as, unfortunately, is too frequently the case, our only resource is the former.

So far as my influence goes to enforce the rule, I should emphatically insist upon determining in the beginning, before we make a move toward treatment, the kind of means adapted to the case under consideration; institute that treatment, and persevere with it to the end, or until some circumstance occurs to convince us of our mistake in this respect. We should not begin by trying what is usually regarded as the least hazardous, and be ready to use the more dangerous, but yet more effective, *because the former had failed*. There is no treatment worth relying upon, but must produce its effects; and in nine cases out of ten, if it does not cure, it will cause disagreeable, and even dangerous complications, and so render the subsequent treatment less effective. No case in which tapping, injections, or efficient pressure has been used ineffectually, is ever left in as good a condition for extirpation, as before any such interference. Hence, I would not tap a tumor that ought to be extirpated, nor allow it to be injected or compressed. It may be said, and it is unquestionably true, that we may not always be able to determine the character and complications of the tumor, so as to be certain which treatment is best adapted to it. In answer to which, I would

say, we must do the very best we can in this respect ; and I think by thus forming and acting upon our judgment, more lives will be saved than by confounding the remedies, in the manner heretofore done, using them more with reference to their danger and efficiency, than their adaptation to the particular case. It would seem that practitioners are divisible into two classes, as to their mode of treating ovarian tumor, viz: those who believe that radical treatment should almost always be avoided, and those who believe in operating in nearly every instance.

Two prolific sources of embarrassment in the treatment of ovarian diseases are first, the knowledge, on our part, of their almost invariably fatal tendency ; and second, the inability of our patient to appreciate the appalling nature of her condition, until such constitutional effects have been produced as would render any efficient treatment powerless to save,—at least, this has been the case with my patients to some extent, and hence we should make a clear and decided statement to them so soon as we become able by our investigations to do so. When doubt exists as to the propriety of instituting radical treatment, we should continue to pursue the palliative until that doubt is dispelled. There are three sorts of cases to which the palliative is indisputably adapted. They are first:—those in which it is not desirable to use radical means in consequence of the absence, and probable great distance of urgent symptoms, while there is a steady advance. It may as well be remarked here, that no palliative measure, such as tapping, great pressure, or other means that will render radical treatment more hazardous should be employed, where we are likely in the future to desire to resort to operative procedure. The second class of cases is that in which the symptoms are urgent, but in which it is not desirable to use radical means, in consequence of the slight chances of success. The third set are such as, in their nature and condition, would call for curative means, but the patient will not consent to their employment from fear of the danger or pain they inflict. The first set of cases is not very frequently met with, compared to either of

the others; yet we do occasionally meet with these slowly marching cases, in which we have an opportunity to try the effect of medicines; and it is precisely in this kind of cases that we *appear* to derive most benefit from medicines internally administered. We are prone to believe that the tardy development is dependent upon the virtue of some favorite remedy used, and deceive ourselves as to its efficiency; when really all depends on the natural slowness of the tumor. The alteratives, as mercury, iodine, sarsaparilla, chlorine, etc., have all had their advocates. It was at one time, and even now is the practice of some men of ability, to give mercury to very slight ptyalism, with the hope of bringing about absorption. Iodine administered frequently, so as to induce its specific influence upon the organism, has been, and is still, by some, highly lauded as capable of curing ovarian dropsy. A chronic administration of either of these remedies is sure to affect unfavorably the general health; and as it is extremely doubtful whether there is any efficacy in them, we should not be too profuse in their use. Effusion into the peritoneal sac, or sub-acute inflammatory complications, are often very much benefitted by a moderately protracted course of these remedies. For the same purpose, local depletion, counter-irritants, such as iodine ointment, strong enough to induce irritation of the skin, are often useful; so are diaphoretics, diuretics and cathartics. But, probably, the best course to pursue, in these cases, is to keep up the general health by appropriate exercise, diet and tonics when necessary; and to keep the abdomen constantly, but gently compressed by a flannel roller, which should be applied all over the abdomen, but applied with more stringency over the tumor, and to add to its efficiency, a compress of sufficient thickness may also be employed. I must be permitted again to say, with reference to all these cases, that until the necessity for active interference, in consequence of the urgent effects of the growing tumor is fairly presented, we should carefully avoid all very strong pressure, or operative procedure. In the second class of cases, we need not feel so restricted in our efforts at palliation; it is

best, however, to bear in mind, that too great activity of medication will often do more harm than good. Our object should be to promote such functions as are obstructed, or restricted; the kidneys, for instance, will need especial attention, as will the intestinal canal. The acids have always seemed to me to be particularly applicable to these cases; the nitric, nitro-muriatic, sulphuric, phosphoric, acetic, are all good, and may be alternated often, with the hope of relieving the distressing indigestion attendant upon great distension and imperfect performance of the renal functions. They also very much moderate the distressing exudations from the skin which are often present. The chlorinated tincture of iron is an excellent tonic in such cases. These remedies may all very properly be administered in some of the bitter infusions, quassia, canomile, wild-cherry bark, etc. The best time to give them is immediately after eating. Stimulants ought not to be too freely used, as they encourage the establishment of complications. Brandy, I think the best of the stimulants, and it should be given more for the purpose of inducing sleep, than anything else; and this it will often do, when taken in a sufficient dose on an empty stomach, at bed time. When great restlessness, and want of sleep are wearing out the patient, we must, as in all similar circumstances in other diseases, resort to the assortment of anodynes, beginning with the less disturbing,—being sure to be under the necessity of ending with opium. Chloroform, internally administered, is, I am confident, not sufficiently relied upon. Teaspoonful doses, given in milk, will seldom fail to induce a fine anodyne effect. There is greater necessity perhaps, for a gradual increase of the dose in using it than opium, or most other efficient anodynes. Hyoscyanus, belladonna, cicuta, should all be tried before opium.

We must be on the alert for other complications, and ready for their appropriate treatment. The distressing constipation, which often annoys the patient and physician, will demand a great share of our attention. Injections of water, and various substances will, of course, suggest themselves. It has occurred to me, to be able to induce free movements of the bowels,

by having a pint of warm lard thrown high up in the bowels, when they are very obstinate; the longer the lard is retained, the better. This administered once a day, will act excellently well sometimes. An ounce of fresh beef's gall with three or four ounces of water, often does as well. But the time comes, sooner or later, with the steadily increasing pressure of the tumor, when to lessen its size is indispensable to the further extension of life. Tapping suggests itself as the only palliative means in this state of things. This operation is more beneficial in unilocular tumors than in any other sort; but, is applicable, as a palliative measure, in any tumor containing fluid, when demanded by the supervention of urgent symptoms, indicating the necessity of immediate relief. Under the desperate circumstances mentioned, there can be no question about the propriety of tapping the patient, yet this apparently trifling operation is not devoid of inconveniences and dangers, that should be weighed deliberately, and if they do not deter us from resorting to it, will at least make us particular not to use it as anything but an indispensable remedy. One serious inconvenience connected with tapping, is the readiness with which the fluid re-accumulates in the sac; indeed, the oftener the patient is tapped, the more rapidly will accumulation take place. If, therefore, we commence using it too early, we are likely to shorten the life of the patient, if in no other way than by the increasing emaciation, dependent upon the immense drain of fluid from the system.

The dangers of tapping are both immediate and remote. The immediate are such as are connected with, and occur immediately upon the performance of the operation. Dr. SIMPSON sums up five that are more frequent, and against which we should be upon our guard;—first, the chance of wounding the urinary bladder: this may be avoided by evacuating the organ, unless it is tied to the abdominal wall by adhesions; second, the puncture of the uterus when it is drawn up with the tumor: by introducing the sound into its cavity we may learn its whereabouts, and thus be enabled to avoid it; third, the front part of the tumor may be traversed by the fallopian

tube, and this last be wounded by the trochar,—an accident which should, of course, be avoided when we can, but which I cannot think of much importance, nor do I know how it can certainly be avoided; fourth, the internal venous circulation, on account of the pressure, is obstructed sometimes, and the blood is directed to the veins in the walls of the abdomen, so that these veins may be wounded, but generally they are large, and may be seen, and thus avoided; fifth, the epigastric artery is sometimes wounded: we should carefully feel for the pulsation of arteries in the thin walls before the trochar is plunged into the tumor. As may be seen, these dangers, may, for the most part be provided against; but the second class of dangers,—namely, the remote,—those that follow the operation some time after its performance, and are not dependent on the manner or place of the puncture, are unavoidable, and cannot be foreseen.

The dangers and benefits of tapping cannot, and ought not, to be estimated by comparison with other operations. Each operation of whatever kind, has its place, and is followed by its good or bad effects, for the reason, among others, that it is appropriate, or inappropriate. Generally, no two operations are applicable to any one condition of things; and we should not allow the question of danger to decide between them, unless in very rare and exceptional cases. The statistics, as far as I have been able to collect them, may be well summed up, as Dr. WEST has done, and I shall rely upon his figures: "The chief, indeed, almost the only, numerical data of which we are possessed, bearing on this subject, are derived from a table of 20 cases, compiled by Mr. SOUTHAM, of 46 cases collected by the late Mr. LEE, and of 64, the results of which are given by Professor KIWISCH. Of these 130 cases, 22 terminated fatally within a few hours or days after tapping, and 25 more in the following six months; or in other words, 34.7 per cent of the cases ended in the patient's death in the course of half a year after the performance of tapping. In 114, of the 130, death is stated to have taken place: 22 within less than ten days, 25 within six months, 22 within one year, 21 within two years;

11 within three years, 13 after a period exceeding three, and in some amounting to several years.

In 109 of these cases, we are further informed how often the patients had been tapped. It appears that 46 died after the first tapping, 10 after the second, 25 after from three to six tapplings, 15 after seven to twelve, 13 after more than twelve." It would appear that the first tapping is very much more dangerous than subsequent ones. Dr. WEST says further:—"unfavorable, however, as are the conclusions to which we are irresistibly led by such facts, such as those which have just been mentioned with reference to the ultimate issue of tapping, it is yet very questionable whether they represent the whole of the truth concerning this matter." Dr. ATLEE, of Philadelphia, thinks tapping not a very dangerous operation. Mr. BROWN thinks its dangers greatly overrated.

There can be but little doubt that much of the mortality of tapping is due to the fact of the desperate character of the cases in which it is used; and the reason why so many die in so short a time after the first operation, is, that in many instances the patient is almost moribund before it is resorted to. When not attended with the immediate dangers above enumerated, tapping is either followed by great relief from suffering or by the remote or sequential dangers. They are for the most, prostration or inflammation. The prostration is sometimes so great, that no management can prevent the patient from dying in a very short time. Such great prostration is, however, exceedingly rare; it is more common to have it in a more moderate degree. The patient will feel faint for an hour or two, and then gradually rally, or she may continue to be pale and languid for several days. For such slight cases, the horizontal position, rest, and good, digestible, somewhat stimulating food is all that will be needed. When the prostration is great, and danger of fatal sinking present, the case must be treated energetically. The means calculated to bring about reaction must have reference to the causes of the prostration. The evacuation from the general vascular system is not a cause, because the fluid in the tumor is extravascular; but it

is a sudden change in the distribution of the blood. The evacuation of the abdominal cavity of so large a bulk of its contents, and the inability of the abdominal muscles to contract sufficiently to keep up the pressure to which the viscera have been habituated, are the causes of the irregular distribution of the blood. The want of pressure upon the abdominal viscera allows a large accumulation of blood in their veins, and it is there retained. In proportion to the amount thus collected in the abdomen, will the blood be withdrawn from other parts and organs. The brain will partake of this temporary anemia, and consequently be incapable of discharging its functions with its wonted efficiency. This is the condition, not a want, but an irregular distribution of blood. Our first object should be to, as nearly as possible, reestablish the previous condition of the abdomen. This can be, to some extent, accomplished by pressure, with compresses and rollers. The compresses should be as large as the space covered by the muscles of the abdomen, and thick enough to fill up much above the level of the ribs and iliac bones on the side. The roller should be applied from the pubis to the ensiform cartilage, with as much power as the patient can bear, without great discomfort. Then the head should be persistently kept below the level of the body. This simple treatment, instituted early, will do more than all other means without it. We can very properly, however, give stimulants, in addition, when necessary. When this danger is passed, inflammation of the sac or peritoneal cavity is next to be apprehended. The sac undergoes every degree of inflammation, from the slow, subacute, unobserved degree, which vitiates the fluid effused into it, either by allowing decomposition in it, or by the production of pus, or effusion of blood inside, or fibrin on its external surface—in this last case causing adhesion—or such degeneration of the walls of the sac, as to cause an obliteration of the cavity, a cession of its secreting powers, or a perforation, and consequent peritoneal communication; or, what is perhaps more common, an acute degree, announced by severe pain referred to the point most intensely affected, or to the whole ab-

dominal region, thus showing the probable involvement of the peritoneum. Indeed, I think it very probable that the sharp pain ordinarily present in these cases, indicates peritoneal inflammation, and that there is but little pain in the case of inflammation of the fibrous and internal coats of the sac. Fever, of a somewhat high grade, is apt to attend upon the degree of inflammation last mentioned, accompanied by headache, weariness, aching in the back, limbs, etc. But in the inflammation of the inner coats, in which pus or fibrinous products are effused in the fluid of the tumor, there is generally but slight fever, perhaps none, at first; but the vital powers are more or less depressed, copious perspirations at night, possibly delirium, and in bad cases, all the symptoms of pyæmia, hectic, exhaustion, and death. Now all morbid conditions resulting from tapping, should be met promptly by the remedies appropriate to them, when they occur under other circumstances,—antiphlogistic regimen, depletion, fomentations, cathartics, anodynes, alteratives, etc. In pyæmia, tonics, stimulants, good diet, and time will be our resort.

The operation of tapping is simple, and easily performed generally. To avoid the depression which follows the evacuation of so large a quantity of fluid as is contained in the abdomen sometimes, we should have our patient on the side, very near the edge of the bed, with her head and shoulders low. Two large and long hand towels should be passed around her body, with the edges close together upon a level with the point where we wish to introduce the trochar, and these ends given to an assistant who stands behind the patient. The assistant, having in charge these hand towels, should be directed to draw upon them so as to keep up a state of tension as the fluid is being evacuated. To avoid the dangers enumerated as immediate, we should assure ourselves that the bladder is empty, and if we mistrust that it is not in its proper place, we should introduce a sound, so as to assure ourselves of the whereabouts of the fundus. If we have not already done so, we *must* sound the uterus, also, and thus be sure of its harmless position. After these precautions, the best rule,

perhaps, is that given by Dr. SIMPSON; and that is, to feel for the most fluctuating point, the place where the walls are thinnest,—look for veins and feel for the pulsation of arteries. The thinnest parts, where fluctuation is most evident, is usually the right place to make the puncture; but there is not always any such point, there being but little difference in this respect over the whole of the front surface of the tumor. In such case we may be governed by the ordinary rules for the place for tapping. The linea alba, between the symphysis and umbilicus, is the most eligible in the greatest number of cases. If any objection to this arises, a point midway between the umbilicus and the anterior superior spine of the ilium is, as a general thing, safe and effectual as any. Some surgeons recommend other places as free from the objections that are sometimes urged against these points. They say that tapping through the vagina is quite safe from the immediate, and not so likely to be followed by some of the sequential disasters. The rectum is thought to be still better by some. The vagina is quite a commendable place, if we are careful to ascertain well the position of the bladder and uterine, and avoid them. Our instrument (the trochar) should be large, four or five lines in diameter, the point should be sharp, and a little longer than they are usually made. The canula if not large, will not freely discharge the fibrinous concretions, or thick treacle-like fluid, and if the point is not long and sharp, we inflict considerable unnecessary suffering in the introduction of the instrument. We may plunge the instrument in towards the central axis of the tumor, until sent home to the rim of the canula. If, however, our instrument is not pretty sharp, it will be very much better to make an opening with a very sharp, thin bistury, which will cause less suffering, and answer every purpose as well.

The third sort of cases to which palliative treatment is applicable, those in which our patient will not submit to radical means, must be managed in almost every particular as I have described the treatment for the other two kinds. Remembering the rules and rationale, it will not be difficult to adapt our means to the end in view.

The curative treatment of ovarian disease is believed by many, almost all, authorities, to be practicable only by instrumental means. There are some very respectable writers, however, who believe that there are cases in which we may hope for success from medicinal and mechanical treatment without the use of surgical instruments, and they think that there is enough virtue in such means to warrant a trial in very many instances.

The immediate objects to be accomplished are, first, to arrest the growth of the tumor; bring it to a stand-still; and thus avoid the disastrous results which attend the attainment of very large size, with its consequent pressure, ruptures, etc. Second, when this is not practicable, to obliterate the sac, or otherwise the tumor. The sac is sometimes reduced by contraction to a mere knot of compressed tissues, which are more and more atrophied and wasted, until very slight traces of their existence are left; or, by inflammation and contraction, the tumor is converted into a fibrinous mass, enveloped in a fibrinous sac, which remains the same throughout life, with very little alteration; or suppuration may accompany inflammation,—the whole tumor be softened down into pus, and discharged by ulcerating through the vagina, rectum, abdominal walls or bladder, and all traces of it disappear. Or, again, the walls may collapse without shrinking much, and adhere by adhesive inflammation, and in this way its effusive surface be destroyed.

When neither of the above two immediate objects is practicable, or it may not be desirable or advisable to attempt them, we may (thirdly), remove the whole, or a part of the tumor from the abdomen, and thus either get rid of the whole of the offending growth, or, after a part is removed, hope to effect, by one of the processes of obliteration above alluded to, the destruction of the balance. The means used for the arrest sometimes cause an obliteration of the sac, and do more than merely stop its growth; so that it will not be the best plan to formally treat of those means by which we attain the first object desired. I shall consequently feel at liberty to in-

introduce and speak of such as sometimes arrest, and sometimes cause a disappearance of the tumor.

Three general ideas seem to govern individuals who rely largely upon the use of internal remedies for the cure of ovarian dropsy, viz: that the disease is inflammatory in its origin and continuance, and that antiphlogistic and alterative remedies, by arresting this morbid process, will stop its growth, and that the conservative powers of the system, aided by sorbefacients and secernents, will remove it:—that the tumor is developed in consequence of the presence of some one of the cachexiæ, scrofula, for instance, as Dr. BIRD distinctly avers; physicians who entertain this notion of its origin hope to make a cure by changing the general action of the system, by all the means usually recommended for the correction of scrofulous tendencies to disease,—by tonics, good diet, properly regulated exercise, clothing, bathing, and specific medication:—that its origin is entirely independent of either inflammation or scrofula,—a hypertrophy, in the strict sense of the term, of certain normal conditions,—a nutritional development of tissues, similar to the production of nutrition elsewhere; those who entertain this doctrine believe, also, in the atrophicating qualities of certain medicines and mechanical appliances, and hope, by the well directed employment of them, to at least arrest their growth, if not cause their removal by absorption. A number of cases are on record that encourage the hope of doing something by medicines internally administered; and while I am free to state that I have really hardly any faith in them, as curative means, the recollection of the discouraging results of any kind of treatment, forbids me too strongly deciding against their use in properly selected cases. Nor do I think it fair to say, as has been said, that cases treated by internal medication and recovering, are but instances of spontaneous cures, and would have done as well or better without the treatment. Dr. DENMAN, in his *midwifery*, by Dr. FRANCIS, at page 151 says, “in the beginning of this dropsy, when the increasing ovary is first perceptible through the integuments of the abdomen, and sometimes in its progress, there is often

so much pain as to require repeated local bleeding by scarification or leeches, blisters, fomentations, laxative medicines and opiates to appease it. I have also endeavored to prevent or remove the first enlargement by a course of medicines, the principal of which was the unguentum hydrargyri rubbed upon the part, or calomel given for a considerable time in small quantities with an infusion of burnt sponge; or the ferum tartarisatum or ammoniacal; trying occasionally what advantage was to be obtained from blisters, from a plaster of gum ammoniacum, dissolved in the acetum scillæ, or lastly, from electricity. From all, or some of these means, I have frequently had occasion to believe some present advantage was obtained, or mischief prevented; but when the disease has made a certain progress, though a variety of medicines and of local applications have been tried, no method of treatment has been discovered sufficiently efficacious to remove it, or prevent its increase."

COLOMBAT is of the opinion that "though we ought not to place much confidence in the means derived from medicine, strictly so called, we are of opinion that they ought always to be employed before recurring to those offered by surgery. Consequently sudorifics ought first to be prescribed, for example: guaiac, sarsaparilla and vapor baths; resolvents, and amongst them mercurial frictions successfully employed by CLARK and M. NAUCHE; hydriodate of potash, with the internal use of iodine in small doses; sea-bathing, or salt water baths, from which M. LAENNEC, of Nantes, says he has obtained most excellent effects; the thermal baths of Aix, in Savoy, or those at Barege, and lastly, antimonial frictions, cauteries, moxas, and blisters, applied upon the abdomen. Diuretics, such as squills, nitre, etc., which, according to HALLER were usefully employed by WILLIS; a decoction of ashes, in the proportion of a handful to the quart of water, employed by PETIT RADEL, and from which he obtained a cure after having punctured the cyst. Lastly, purgatives in divided doses; as for instance, aloes, rhubarb, croton oil, calomel combined with castile soap and sulphate of potash, etc., are other means.

which, in conjunction with abstinence and compression of the abdomen, may be prescribed at the commencement of the disease for the purpose of assisting the absorption of the fluids, at first small in quantity." After trying all these, however, surgical treatment, he thinks, will be our only resort in a vast majority of cases. The efficient application of pressure seems to promise more than internal remedies. Well regulated, efficient and long-continued pressure may produce obliterating inflammation of the sacs, and consequent cure; or, by affording great resistance to the expansion of the tumor, arrest its growth.

Resolution and absorption of an ovarian tumor is a very doubtful fact however, and notwithstanding their unaccountable disappearance, should not be counted prognostically. The second object in our treatment, that of obliterating the sac *in situ*, affords more reason for hope in properly selected cases. The means used consist of tapping, with pressure, with injections of stimulants to induce inflammation of the sac, and with injections and pressure combined; or what is sometimes successful, the establishment of a fistulous opening in the sac, that either communicates externally, through the abdominal walls, through the vagina or rectum, or simply with the peritoneal cavity. The above mentioned treatment is applicable, properly, to the unilocular or single cyst cases only, as it is impracticable to tap, inject or establish a fistula when there are many sacs; and what is still more discouraging in the multilocular variety, the sacs are not only filled again after tapping, as is generally the case with the monocyst; but there is a constant reproduction, or perhaps it would be more correct to say, that they are continuously developed from the ovisacs that are matured every month. Tapping, followed by pressure or injection, is very apt to change the condition of the tumor, in one respect at least, and that is to cause adhesions to the surrounding peritoneal surface. In one case of unilocular tumor, in which an external fistulous opening was made after the patient had been tapped six times, and had iodine injec-

tions three times, the sac, so far as we could determine, was universally adherent,—no portion of it could be brought out of the wound.

Very fortunate instances sometimes occur, in which the evacuation of the tumor by tapping is followed by a speedy and permanent obliteration of the sac. It is exceedingly doubtful, however, whether these were not cysts developed from the broad ligament, or some substance in the neighborhood of the ovary, but not involving its tissues at all. Certainly, they are exceptional, and cannot be expected in any given case: so that we ought never to be satisfied with tapping, when our object is the obliteration of the cyst. Pressure, in conjunction with tapping, is applicable, perhaps, to a larger number of cases than any of the other modes of treatment. It is very much more successful in cases of the monocystic than in any other variety. The application of pressure to a tapped sac, has for its object a complete closure of the cavity of the cyst in such a manner, as to bring its walls as nearly as practicable, in contact throughout; this at once, if thoroughly effected, modifies the secreting capacity of its surface, and perhaps from the time of its application, arrests, more or less completely, the effusion of the fluid. Now, if this cannot be done so as to operate upon all the surface of the walls, we can almost always bring some portion of the collapsed walls in contact. The continuous and prolonged contact of these surfaces bring about a low, and in some cases a pretty high grade of inflammation, causing adhesion, or a change in their structure, so that they are no longer of the same ovisac nature, and hence they do not effuse the thick albumen previously produced, and the tumor remains inactive, or shrinks and nearly, or entirely disappears; or suppurative inflammation may dissolve down, and discharge the mass through some adventitious or natural outlet.

(To be Continued.)

ARTICLE IX.

ELIGIBLE PHARMACEUTICAL FORMS FOR THE
ADMINISTRATION OF MEDICINES.

AN INAUGURAL THESIS, BY JNO. MAYNARD WOODWORTH, M.D.

Since the very object of the profession is to alleviate human suffering, it may seem strange that the physician should unnecessarily augment it; but that he does so, almost as often as he writes a prescription, cannot be doubted. Most physicians look upon the disagreeable dose they often prescribe, as a matter of course, an evil not to be avoided; and it is to be regretted that most practitioners think if their medicines only cure the disease, it matters little in what way the dose is administered. I believe that disgust for disagreeable things can be cultivated; and this ingredient of human nature seems peculiarly susceptible to repulsive medicines. The child never forgets the taste of castor-oil or senna-tea; years after, the sight or smell—and to some the mere mention of the name, will excite nausea. This is no fancied sensation, but a real one, and I apprehend that upon this fact more than any other, depends the idiosyncrasy of some persons to certain medicines.

That the bad effects, produced by the disagreeable sight and disgusting taste of some medicines, often defeats the purpose for which they were given, is a fact that cannot be questioned; but the evil does not stop here, for so great is the dislike for the bitter dose, that some persons allow their sense of taste to govern them altogether, and they patronize that unmitigated humbug—Homœopathy.

All that Homœopathy can claim in its favor, is, first:—its medicines are agreeable; and, second:—it satisfies the mind that something is being done,—providing the patient has faith in it. These two, together with a kind of morbid inclination in men, and particularly in women, to run after every new

thing, are the only reasons why Homœopathy is at all tolerated in the community.

This fungus growth of the healing art, will however, not exist in vain. The butterflies and insects that are born into the world full grown, live only a few hours, to propagate their species, and when their life-work is done, they die. So with Homœopathy; when we have applied the principle of agreeable exhibition of medicines, which is its only life-spark, it will die a natural death.

Great improvements have been made in the last hundred years—but the fathers have sought most after remedial agents, and have left for us to discover the most eligible forms for their administration. One hundred and fifty years ago, distilled vipers, scorpions, frogs, worms, little dogs, lizards, mice, their teeth, skulls, liver, tongues, tails, claws, etc.; feathers and brains of birds, shavings of men's skulls put to violent death, precious stones and metals, together with the leaves and roots of some of our medicinal plants, and a few chemicals, constituted a fair type of the pharmacopea. From these the physician made his prescription, sometimes incorporating over sixty ingredients in a single powder or mixture.

Notwithstanding the doctors of the last century prescribed so many disagreeable things, still they had an eye to please, as will be seen from the following prescription:—

R. Oriental Pearls prepared.
Deer's Heart-bone aa ʒi.
Leaves of Gold and
Silver, - - aa ʒi.

and a dozen other ingredients, all were finely powdered, except the gold and silver, which were cut in little pieces for beauty's sake. This powder was said to create cheerfulness, to bring a good color into the face, and to strengthen and comfort the heart; an effect which I have no doubt it would have at the present day.

Improvement in the preparation of medicines is left too exclusively to the pharmacist.

The physician who has access to the sick chamber, and watches the effect of remedies at the bed-side of his patients,

is surely the most capable of judging in what form a medicine should be prepared to render it the most agreeable. Mixtures with a repulsive taste or smell, or with a sediment in the bottom of the bottle, should never be allowed in the sick chamber. All that is disagreeable in taste or smell should be covered by the addition of some agreeable adjuvant, and when possible, they should be of some bright color; care even should be taken to have the label pasted squarely on the bottle. As small a matter as a crooked label may seem to be, there are persons, who when irritable and weak, would be worked into quite a fever by seeing such evidence of want of precision before them all day.

Official vinegars and dilute mineral acids, are rendered more agreeable by the addition of a small quantity of an alcoholic solution of some essential oil, as lemon, pimento, winter-green, ceylon cinnamon, etc. Dilute phosphoric acid should have added to it a solution of the essential oil of sweet almonds. Compound tincture of cardamom and concentrated infusion of rose, are excellent additions to medicated acids or vinegars—covering a portion of their taste and imparting an agreeable color. Lactic acid, which is used by many physicians as a remedy for dyspepsia and indigestion, is made into an agreeable drink with water, sugar, and essence of lemon.

Jellies of copaiba or the fixed oils, as cod-liver and castor-oil, are agreeable; and may be prepared thus:—Take of the copaiba or fixed oil, four ounces; honey, two ounces; powdered gum arabic, one ounce; Russian isinglass, three drachms; orange-flower water, three ounces. Dissolve the isinglass by aid of heat in two ounces of the orange-flower water. Triturate the other ingredients with the remainder of the orange-flower water in a warmed mortar and form an emulsion by adding the solution of isinglass; stir until nearly cool, and set aside to gelatinize. It is best flavored with a little oil of bitter almonds. The fishy taste of cod-liver oil, which renders this favorite medicine absolutely impossible to be retained in the stomach of some persons, may be completely destroyed by the addition of a few drops of the essential oil of bitter

almonds, and at the same time, the prussic acid of the oil of bitter almonds acts as a sedative to allay the cough of the patient. Chewing orange peel or burnt coffee before taking cod-liver oil will be found of advantage. A very agreeable emulsion of cod-liver oil may be prepared with carbonate of potassa, sugar, and cherry laurel or orange-flower water. Emulsions should be perfectly white, and agreeably flavored. Milk is a natural emulsion, in which butter is suspended in an aqueous liquid, by albumen and caseine. I believe that nature has chosen the best substances to form an emulsion; I therefore see no good reason why albumen should not, in most cases, take the place of gum arabic in our extemporaneous emulsions, as it forms a preparation of snowy whiteness.

Castor oil is conveniently taken by suspending it between a little syrup and wine, or an infusion of coffee in a wine glass; and by taking care not to bring the lips together on the glass, no trace of the oil will be left in the mouth.

The concentrated fluid extracts are much superior to the officinal tinctures. I have successfully replaced part of the hydro-alcoholic menstruum in many of the fluid extracts, with sugar; rendering them more agreeable, without detracting from their efficacy as remedial agents. Most of the alcoholic tinctures, might, I think, be successfully treated in the same way.

Strong fruit syrups, prepared by dissolving 24 ounces of refined sugar in a pint of the expressed juice of berries, with gentle heat, make delightful adjuvants to many extemporaneous prescriptions; a small quantity of glycerine should be added to the changeable syrups to prevent them from fomenting. A delightful syrup may be prepared from the essential oil of sweet orange-peel. Muriate of ammonia is best given in syrup of liquorice root; it is preferable to a solution of the black extract—covering the taste equally well, and having the advantage of forming with the salt, a clear mixture. Syrup of wild cherry bark is an excellent adjuvant to the officinal syrup of sarsaparilla, and to cough mixtures. It is a good vehicle for anodynes used in pulmonary complaints. A strong

symp of roasted coffee is an excellent vehicle for administering bitter alkaloids, as quinia, morphia, etc.; they may be conveniently given in powder, by mixing the alkaloid without breaking the crystals, by gently agitating the crystals with a sufficient quantity of impalpable powder of sugar of milk. In this way each crystal is enveloped with the sugar, and when placed upon the tongue and quickly washed down with a draught of water, leaves no taste but the dissolving sugar.

Chloroform nearly covers the taste of bitter alkaloids and many bitter tinctures. It remains to be ascertained whether the properties of these medicines are changed by the presence of chloroform.

Infusion of red rose leaves is a good addition to many extemporaneous mixtures—disguising the taste, and imparting a beautiful color. Chalk mixture should never be prepared with cinnamon water made with oil of cassia—the essential oil of ceylon cinnamon should always be used, as it produces a medicated water of better flavor, and more agreeable odor.

Epsom salts may be made into an agreeable drink with water, sugar, and lemon juice or citric acid. The disagreeable sulphurets are best given in glycerine. Iodine and its salts may be given in glycerine. The solubility of the iodine is facilitated by the addition of a little iodide of potassium. Camphor possesses the property of disguising the penetrating saline taste of iodide of potassium. Escharotics, as iodide and chloride of zinc, nitrate of mercury, etc., in glycerine, are more persistent in their action and easier controlled. Glycerine is a good addition to tannin-containing mixtures; it will dissolve its own weight of tannic acid.

Volatile substances, as ether, chloroform, turpentine, etc., are best given in capsules of gluten; a capsule containing five minims of the medicine, does not weigh over two grains. These capsules are now imported from France, but there is no good reason why they can not be made in our own country.

A solution of cantharadin and pure india-rubber in chloroform, is not attended with the disagreeable contraction of the cantharidal collodion. A little glycerine added to collodion,

will keep the gun-cotton flexible when dried on the skin, and prevent it from contracting so strongly as to become cracked.

Cerates and ointments should be of a creamy softness, and when intended to be white, they should be snow-white; to accomplish this, butter of cocoa may be substituted for lard, and glycerine for fats and oil, in most cerates. When practicable, cerates should be delicately perfumed. Sulphur ointment should be colored by the addition of carmine; most persons have a peculiar aversion to its yellow color. A good substitute for sulphur ointment may be made, by boiling together three parts of sulphur, one of caustic soda, and ten parts of water, stirring until the soda and sulphur are united, when the fluid may be decanted and kept from the air; by this process, sulphur is obtained in a fluid form. One application of this mixture, rubbing it into the skin 15 or 20 minutes, has effectually killed the little insects, (*acarus*.) Many powders are best given to children, in a lozenge or *boudon*, delicately flavored and rose-colored. Santonin, as an anthelmintic, should be given this way. Powders may be given enveloped between two thin slices of some fruit jelly—wafer envelopes are less bulky. They may be made by taking a portion of the finest wheaten flour made into a thin paste with water, and baked between two smooth irons pressed firmly together. When removed, it should be cut into a square sheet of convenient size; it is used by dipping into water and dropping the powder into the centre—the edges folded over it, when it may be swallowed like an oyster, without tasting the contents.

Pills should always be coated—it is but the work of a minute, and there is no excuse for obliging our patients to swallow bitter pills. In the last century, pills were frequently coated with gold-leaf; and it is sometimes resorted to at the present day. It is truly a very elegant method, and one that is calculated to please the patient; their solubility and consequent activity I can not answer for; though I conclude, from the extreme thinness of the gold-leaf, that their action is scarcely retarded. Pills are coated with gold-leaf by first

moistening them with a little syrup, and introducing them into a hollow sphere along with the requisite quantity of gold-leaf; by rapid motion of the globe for a few seconds the pills are turned out with a gilt coating.

Pills are easily and effectually coated by first moistening with gum paste, and then rolling in finely powdered sugar of milk; the sugar of milk is preferable to common sugar, from being not so easily soluble. The polished coating of the manufacturers can only be obtained by carefully regulated heat and considerable time in the manipulation, and therefore is not practicable for extemporaneous prescriptions. Pills containing salts that are decomposed by exposure to the air, should be coated with an ethereal solution of mastic, or just as good, the dried gum of *silphium lancinatum*, the common rosin weed of our prairies. Sulphate of quinia is best made into a mass by adding a sufficient quantity of aromatic sulphuric acid to form a thin paste, and rubbing with a spatula on a tile, until the paste is of proper consistence. No gum or syrup need be added. Pills should be as small as practicable, and consequently the syrup or gum, added to form the mass, should be used as sparingly as possible. Several years ago I prepared granules of a few medicines, to show that allopathic doses can be exhibited in as small form as any one would wish, and still be as effectual as more bulky doses. A case containing five vials of these granules, was no larger than a gentleman's watch, and could be conveniently carried in the vest pocket. The physician often wants medicines in a hurry, and no time can be spent to send to the apothecary. These little cases containing medicines calculated to meet the greatest variety of indications, were used for these special occasions by several of the best physicians of Chicago, and with great satisfaction to their patients. Several instances were related to me, where families of the homœopathic faith, employed the regular practitioner because they heard they gave medicines that were easy to take! As an example of minuteness—the *veratrum viride* granules contained only the solid matter of one minim of Norwood's tincture, and I think must have been

smaller than any pill Hahnemann ever dreamed of. It has been suggested that saturated tinctures of medicinal plants, not easily decomposed by heat, be inspissated upon cane sugar, or sugar of milk, as an eligible form for administration. Homeopathic globules are made of flour and cane sugar; why not make use of the little granules, by medicating them with concentrated alcoholic solutions of the more powerful alkaloids, and while it is the fashion for the doctor to prescribe *something*, whether the patient is sick or not, I apprehend that the *unmedicated* globules would have a happy effect in many cases.

It seems to be desirable to have medicines in as small bulk as possible; for this reason the active principles of plants have gained great favor with the profession. To meet the demand for these favorite medicines, Messrs. Tilden & Co., and Keith & Co., have sent into the market a great variety of so-called *active* principles, which are recognized and prescribed as such, by the best practitioners. These so-called *active* principles, are chiefly dessicated alcoholic extracts, and should not be called by names that can only be properly applied to active principles. This unfortunate ruse will lead to confusion and trouble hereafter, when the *real* active principles are obtained.

VALERIANATE OF AMMONIA IN NEURALGIA.—A decided success has been obtained at the Royal Free Hospital, in the treatment of the more severe forms of neuralgia by the valerianate of ammonia, and a number of cases are cited in the *Lancet*, where prompt and permanent relief followed the exhibition of the salt in doses of twenty grains or more. As the crystals are very deliquescent and decompose rapidly, it is recommended that the salt be kept in solution, and given in an infusion of some of the tonic bitters.

The iodide of ammonium is also meeting with much favor in Guy's Hospital, in the treatment of certain glandular swellings,—in bronchocele it is found particularly beneficial, effecting cures after iodine and iodide of potassium had failed. It

is given, internally, in five-grain doses, two or three times a day, in some bitter infusion; locally, in the proportions of a drachm to the ounce of glycerine, as a liniment, or of simple cerate, as an ointment.

The Clinique.

MERCY HOSPITAL—SURGICAL WARDS.

Service Prof. E. ANDREWS, Surgeon-in-Charge.

Reproduction of the Inferior Maxillary—Preservation of the Teeth.

Reported for the EXAMINER.

GENTLEMEN:—We have here an unusual case. A few weeks ago, I removed from this man nearly the whole of the right half of the lower jaw, yet, singular to relate, I have saved his teeth, which are now growing firm in the new bone which is replacing the old. The only instance like it which I ever heard of, is related in *Championniere's Journal* in the following words:—

“In this case the right side of the inferior maxillary was extracted *in toto*, with the articular condyle, and has been so perfectly replaced by the efforts of nature, that is now almost impossible to discover which side of the jaw was removed by the surgeon. A singular peculiarity is the preservation of the teeth, which were left by the operator, attached to the gums as moveable as a string of beads, and became subsequently consolidated by the closing up of the ossified layers secreted by the periosteum. Unfortunately, after having performed their functions for the space of two years, they one after another dropped out, but the patient nevertheless manages to masticate his food, and to speak distinctly.”

In the case before us, the disease commenced some three months after a contusion of the head, and progressed until it necrosed the right half of the jaw from the symphysis back to the neck of the bone, the condyle escaping injury. In this condition he was brought to me. I made an incision along

the base of the jaw, and seizing the dead bone with the forceps, drew it readily out. On examination, I was surprised to perceive that the sockets of the teeth were empty, they having remained attached to the gum, and slipping easily from their cavities when the bone was drawn down. The finger introduced into the wound felt the row of fangs, apparently clothed with periosteum and strongly attached to the gums, but easily moved about. In some parts of the cavity, the periosteum had begun to reproduce a shell of bone, and taking courage from this indication, I determined to leave the teeth in position, in hope that the new growth of bone would enclose the fangs, and thus render the teeth firm and useful. The result has justified my expectations. You see that the arch of the jaw is becoming firm, and the teeth instead of hanging loose in the gum, are set strongly, giving the sensation to the finger as though they were set in cartilage, or other semi-indurated tissue. Whether they will drop out after two or three years' service, as in the case I quoted you, remains to be seen. Since the removal of the jaw proves the loss of the dental artery, nerve and vein, it becomes necessary to explain in what manner the teeth obtain nutrition after the necrosis of the jaw. The teeth are not set in solid bone; on the contrary, there is a periosteum lining the socket, and intervening between the fang and the bone. When necrosis of the jaw occurs, this periosteal lining, like the similar membrane on the outside of the bone, may retain its vitality, and supply to the dental artery, by inosculation, the blood which is no longer transmitted through the dental canal. The absorbent action of the membrane upon the bone enlarges the space between the fang and the socket, and thus loosens the tooth, so that, at the time of operation, it readily slips from its bed, and the necrosed bone is drawn from it, as a boot is drawn from a foot.

Many remarkable instances are on record of complete restoration of the jaw after removal for necrosis, but these two are the only cases which I know of, where the teeth were preserved, so as to have a living attachment to the new bone.

You will find in practice, that the inferior maxilla is more likely to be reproduced after necrosis than any other bone in the body; hence, calculations should always be made on this event, and the following directions be observed:—

First, the operation should not be performed early in the disease, unless there is some spreading disease, as epulis, which requires to be limited by excision. In cases of necrosis, which involve a large portion of the jaw at once, with little danger of subsequent extension, it is important to preserve the sequestrum in position until it is fully separated from the living bone, and if the irritation is not too great, until the new shell of bone produced from the periosteum has attained solidity enough to maintain the form of its arch.

Secondly, before removing the bone, care should be taken to ascertain whether the teeth implanted in it are loose, and if so, to prevent their being torn from the gum with the bone. By a little care, the bone may be slipped downward, and the teeth left in position.

Finally, if the arch of new ossific matter be not sufficiently consolidated to maintain its form alone, art may often supply the weakness of nature. The cases of death of both halves of the maxilla are comparatively rare; and, hence in ordinary cases, the sound side may be made to support the weak one. Before the operation of removal is performed, a dentist should be called on to take a mould of both upper and lower teeth on the sound side. By this method, he can prepare accurately-fitting gold plates to cap the rows of teeth and the gums. The lower plate should be soldered or riveted to the upper in the natural position, so that when placed in the mouth, the arch of the lower teeth will be secured by the support of the former. After the operation, if the new bone lacks strength, the chin will be found to fall over towards the affected side, but the insertion of the plate and the application of a bandage, pressing the chin upward, will hold the lower maxilla accurately in position, until the consolidation of the new bone renders artificial support unnecessary.

Silver plate will do equally well, so far as mere mechanical strength is concerned, but it has the disadvantage of immediately turning black, and presenting a repulsive appearance

to the friends of the patient. If a cheaper article than gold is required, probably the prepared gutta percha, recently introduced for the plates of artificial teeth, would be found available. The preservation of the correct line of the chin is of great importance in the female sex, because any deformity in them, cannot be concealed by a beard; hence, you will exert yourself in such cases to obtain the most perfect of possible results. I have seen bungling efforts to keep the correct position, by wiring one or two of the upper and lower teeth together. But all such attempts are unskilful. The support thus obtained, is not only precarious, but temporary; for where the whole strain is brought to bear on one tooth, the absorption of the alveolar process under the pressure, loosens and displaces the tooth, and often causes its speedy loss; but a pressure which is distributed over all the teeth of one side, is well borne, and may be long maintained. Similar mechanical devices are often the best possible splints for fractures of the inferior maxilla, particularly where the bone is broken into several fragments.

In the surgery of this bone, gentlemen, your ingenuity must be prompt, patient, and fertile. Do not be discouraged by disheartening appearances. By faithfulness and skill, the face of your diseased or injured patient will at length assume a natural aspect, and you will obtain a success which often exceeds your most sanguine expectations.

POTASSIO-TARTRATE OF IRON IN RHEUMATISM.—Rheumatism is one of those affections which at times resist all the ordinary modes of treatment in use, though occasionally it will readily yield to a remedy not commonly employed in that affection. This result we have observed in a case under Dr. Willshire's care, in the person of a somewhat pallid girl, with rheumatism of an erratic character, the pains flying about, as it were, to various parts of the body. To this she had been subject for the last three years, and nothing seemed to produce any marked improvement; she was, therefore, ordered a mixture containing the potassio-tartrate of iron, which has produced a decidedly beneficial effect in a short period of time, the pains having become gradually diminished, but not as yet wholly gone, and her health is better. In obstinate and suitable cases, this excellent preparation of iron should be borne in mind.—*Lancet*.

Selections.

PYROPHOSPHATE OF IRON.

Extracts from Prof. CHAPMAN'S Paper, on the History, Preparation and Therapeutical uses of the Citro-Ammoniacal Pyrophosphate of Iron, name in brief Pyrophosphate of Iron, in the *Boston Medical and Surgical Journal*.

The pyrophosphate of iron, a white and tasteless powder, resembling prepared chalk, is obtained as a gelatinous precipitate in the reaction between the pyrophosphate of soda and the tersulphate of iron in solution. A given proportion of citric acid in solution is neutralized by liquor ammoniæ, as shown by test paper, when pyrophosphate is added, and the liquid boiled until the salt is dissolved. We now have the citro-ammoniacal pyrophosphate of iron in solution; from which we may obtain the solid salt by evaporating to a thick consistency, and then spreading the product on large plates of glass. It takes the form of lamellæ of greater or less thickness; these, when thin, are flaky, brittle, and of a yellowish green color, but when more massive are of a duller and deeper green, and of a resinous appearance. This salt, which has a slightly saline taste, may be made into pills, or dissolved in water in any proportion, by the aid of heat. The solution does not require any addition to disguise it, as the saline taste is trivial and not unpleasant, though sugar and a flavoring ingredient may be added to suit the caprices of patients. Syrup completely conceals the iron and renders the preparation tasteless. This may be made of any desired strength. I usually give from three to five grains of the pyrophosphate three or four times a day.

The solid salt contains its ingredients in the following proportions to the hundred parts:—

Pyrophosphate of iron (anhydrous).....	48.8
Citrate of ammonia (neutral).....	34.66
Water in combination.....	16.54

Total,.....100.00*

The 48.8 parts of the pyrophosphate contain 7.27 of metallic iron. It is a sesqui-salt, represented by the formula $2 \text{Fe}^2 \text{O}^3$, 3PO^5 , and formed by the reaction between three equivalents of the pyrophosphate of soda $3 (2 \text{NaO}, \text{PO}^5)$ and two of the tersulphate of iron $2 (\text{Fe}^2 \text{O}^3, 3 \text{SO}^3)$.

*See American Journal of Pharmacy, January, 1861, p. 39.

The citro-ammoniacal pyrophosphate of iron affords certain marked advantages over the preparations of iron hitherto in use. Its tastelessness, in solution with sugar, and elegant appearance, in our day, when the nauseous doses of the older practitioners will not be tolerated, is an important item in the case of children, or adults even, when the employment of a remedy is demanded for a period of time. There is every reason for presenting our medicines in as palatable and pleasant a form as possible. In addition, there are many persons of a nervous, delicate organization, particularly females, who cannot take the ordinary preparations of iron. They disorder the stomach—in their language are too heating—and thus not only fail to be assimilated, but, by perverting the gastric and intestinal secretion, seriously interfere with the digestion. Hence, instead of enriching the blood by new materials, we are merely cutting off the original supply, imperfect as it is, and making the gastric surfaces a centre of morbid irritation. We observe a similar but more complete abeyance of the nutritive functions, in most patients much reduced by an exhausting disease. However much iron may be indicated, it cannot be borne, much less appropriated by the absorbents, until the digestion is restored by bitters and stimulants.

A marked peculiarity in the pyrophosphate of iron is the fact that it will, scarcely ever, in any of these cases disagree, and very frequently patients who cannot tolerate the ordinary forms of iron, will bear this well, and receive great benefit from its use. Like the others, it may fail to add to the blood a richer pabulum, from some fault in the vital processes of nutrition; yet unlike these, it will not aggravate the disorder for the relief of which it was given. Where the digestive powers are unimpaired, it matters little what preparation is selected, as far as its tonic action on the blood is concerned; since all—certain chemical reasons to the contrary notwithstanding—will fulfil this indication satisfactorily.—The new salt will supply the iron to the blood-globules as promptly, but not more so, than the others.

It has, however, another and more important property, which has entirely escaped attention; that adds new virtues to the iron and bestows on this special compound advantages possessed by none other in the *Materia Medica*. These arise from the pyrophosphoric acid. This acid, or the element, phosphorus—which, has not been definitely determined by chemists—exists alone in a free state in the great ganglionic nervous centres. According to Frémy, the phosphorus is combined with the brain-fat, forming what he calls the oleo-

phosphoric acid. This, by boiling for some time in alcohol or water, splits up into olein and phosphoric acid. This brain-fat, cerebrie acid or cerebrin, is the protein-body of the nerve-centres, and its great peculiarity is the amount of phosphorus it contains. Frémy makes it 9 parts to 1000. There are many other protein-bodies with specific properties that affect peculiar vital transformations, such as, for example, the nitrogenized element in the gastric juice, the pancreatic secretion, casein and the albumen of eggs or blood. This nitrogenized element, by its presence, without any chemical union with the other ingredients, forms a great diversity of new compounds from the same plasma; as, for example, the various secretions from the same blood.

It is, at the present time, tolerably well established (Virchow, Kölliker, Bennett) that all life starts from and is sustained by the agency of cell-growth, and that even morbid actions form no exceptions, but are carried on by the same organic forces. These cells, in their walls, nuclei and contents, contain a peculiar and distinctive protein-body; and being distributed universally in the solids and fluids of the body, are the great vital factors—the pervading life-force—by which organic functions are manifested. Formerly, it was thought that the peculiarities of this nitrogenized, albumenoid substance or protein-body, were due to the nitrogen in its composition, but it has since been found that phosphorus and sulphur are usually present. Both of these are contained in the albumen of the egg or of the blood, and in the casein of milk—fluids that contain every element necessary for the perfect development of living creatures. Milk is the most perfect type of the various constituents and their proportions that should exist in our diet.

Nitrogenized elements in Albumen (Mulder).

Carbon.....	52.97
Hydrogen.....	6.81
Nitrogen.....	15.11
Oxygen.....	23.54
Sulphur.....	1.57
Phosphorus.....	.40

Nitrogenized elements in Casein.

Carbon.....	53.61
Hydrogen.....	7.11
Nitrogen.....	15.47
Oxygen.....	17.99
Sulphur.....	1.11
Phosphorus.....	.74

It thus appears evident that phosphorus holds an important place amongst the other element that contribute to cell-life and nerve-power; but as all nitrogenized food contains it in the same proportions as it exists in the human organism, we cannot select a better remedy for defective nutrition than these ready-formed products. We should naturally suppose, what I have found by experience, that animal food would be the proper agent to restore flesh to an emaciated patient, since it

contains each constituent necessary to its formation. At least, I have not found the phosphoric acid to add anything to the iron in such cases. Phosphoric acid united to a base—lime—exists in all the fluids and solids of the body. The phosphate of lime is formed in the vegetable from the elements in the soil; whence we derive it directly, or secondarily, through animals who have fed upon them. The phosphatic salts are received as such, and are probably carried through the blood to the solids, particularly to the bones, without suffering decomposition and re-construction; excepting, perhaps, in a small ratio. It scarcely could be requisite, when the supply presented to the stomach is always so abundant, to administer any phosphatic salt for the purpose of adding the phosphate of lime to the blood and thence to the bones. The defect of this saline in the bones is not due to the lack of the elements in the food, but to a fault in nutrition. When this is obviated, the common articles of diet will supply all the materials required. We conclude, therefore, that phosphorus is not demanded medicinally to build up the nitrogenized tissues of our bodies, nor are the phosphates to form the bones, since they are all presented to the blood in great abundance.

Phosphorus is regarded by therapeutical writers as a cerebral stimulant, exalting nerve-power directly, but the action of the heart indirectly, and only a moderate degree beyond the normal tension. Of all the organs, the reproductive are most sensibly affected; a fact satisfactorily accounted for in the male by our knowledge that the semen contains, according to Kölliker, over two per cent. of a phosphoretted fat. As throughout nature nothing is without a use, and every element has an importance, though we may fail to discover it; so we may safely conclude that phosphorus must exist in the nervous centres and the spermatic fluid as an integral constituent in their chemical composition. Probably it plays an important part in the normal excitability, and is intimately connected with the manifestation of mind, and the generation of the nervous influence.

In many conditions occurring in disease there might be a lack of this constituent, in a due proportion; precisely as there is of iron in anæmic states of the blood, when our only resource would be to present it in some assimilable form to the system, as there are no substitutes for the elementary bodies. In the case of phosphorus, here has always lain the difficulty; undergoing a slow oxidation or combustion at ordinary temperatures, even when floating on water, its sub-

stance would be burnt in the stomach, and a small particle adhering to the mucous surface would occasion irritation or inflammation. It could not be absorbed as phosphorus, and could only be remedial by the phosphorons and phosphoric acids that are formed. These would undoubtedly combine in the stomach with the earthy or alkaline bases, and be reduced to the state of the phosphates existing in the food. These, we know, suffer but little change in the blood, being found unchanged in all the solids and fluids, but particularly in the bones. From them, however, in normal, healthy nutrition, the phosphoric acid in the nerve-centres must be derived. Should there be a great depression of vital power, the acid is not liberated from its combination, in the same manner, as, we know, the iron is not, from the materials for digestion. The iron set free by assimilation in the blood is appropriated by the hæmatin; the phosphorus by the brain-fat. In hydræmia we give the iron in an easily assimilated form; one that does not tax the vital powers in separating it from a chemical combination, and straightway the blood begins to regain its color, and strength and vigor are infused into every organ. When a certain stage of recuperation has been attained, as shown by a more florid blood and a stronger pulse, the iron will be readily appropriated from the food, which, normally, is the source whence it is always obtained. The fault, originally, lay not in the absence of iron in the substances presented to the blood, but in an imperfect elaborating power, which failed to assimilate it. In like manner, I think, phosphoric acid may, from the same defect, not be separated from its compounds, and thus the ganglionic nervous centres be wanting in their normal stimulus. Hence would arise many nervous and neuralgic diseases, and nervous complications in many forms of debility. It is necessary for us to pass the phosphoric acid into the blood. This we can only do by giving it in a saline state, with a base that would be assimilated, and thus set it free. This is accomplished by the iron, which we know, in ordinary medicinal doses, is used in the blood; in other words, is appropriated by the hæmatin, and cannot be detected by any tests. It is a natural constituent in the red globules, and, consequently, not being foreign to the body, behaves precisely as any of the other elementary principles that form its structure. Strictly speaking, it is a food, and must be supplied as much as starch, sugar, oils and flesh. * *

We have employed the citro-ammoniacal pyrophosphate of iron, in certain conditions, with the most marked and gratifying results.

Whenever the blood becomes thin and watery, there are, almost invariably, troublesome attendant symptoms, seriously retarding the restoration of the patient to health. In all, there will be a lack of nerve-power, from the hydræmic state of the circulation. Hence, could we temporarily augment the stimulating properties of the blood, whilst we are administering the iron, we should prepare the way and present the conditions required for its assimilation, which otherwise might be impossible. Experience has taught most physicians this practical fact, and the indications have usually been fulfilled by the simultaneous use of wine and iron. We have found the pyrophosphate singularly appropriate under these circumstances, and as superior as a natural excitant must ever be over any substitute we may devise. Persons who have been overworked by mental application and prostrated by disquietude and care, or persons who have a shattered nerve-power from some constant source of bodily suffering, have a thousand anomalous symptoms dependant on an imperfectly generated and distributed nerve-power—such as wakefulness, trembling spasmodic movements, palpitations, etc. For this class of symptoms, the pyrophosphate of iron often affords relief in two or three days; and thus prepares the way for the ultimate cure that may be expected from the martial salts. Many times, patients have expressed wonder at the calming and tranquilizing effects of the medicine; not only in mere functional aberrations and irregularities, but also in cases where actual disease existed in the nerve-centres. In both instances, the stimulation is immediate and transient, and can be of no avail, except by removing irregular nervous distribution; whilst the iron is appropriated more readily by the organic forces now freed from a great source of disorder. A lady in this city, with spinal meningitis in the cervical region, had great feebleness and trembling, but especially paroxysms of an asthmatic shortness of breath, that greatly interfered with the aëration of the blood. The first trial with this remedy removed, in a few days, the severity of the symptoms; so much so, that the patient was enabled to leave her bed. Her breathing was hurried only on exertion. The remedy becoming less potent in subsequent attacks, and then eventually quite useless, was abandoned, and other means were resorted to with the same ill success. The patient, after being under my care, without benefit, for three months, moved into the country, and nothing has been heard of her since. In other instances of anæmia, where time showed an organic basis for the nervousness, a temporary advantage has been gained by this form of iron;

showing the stimulation afforded by it to the brain and spinal marrow. This stimulation, although only temporary, is of permanent value in all functional disorders of the nerve-power, where, in the mean time, we can rectify the states on which they are dependent. This is shown markedly in anæmia and chorea united. A young girl, 16 years of age, presented herself at the Hospital Clinique with symptoms of anæmia, amenorrhœa and chorea. She had been well at two periods, four months ago; but since then her turns had failed, and she had become affected by these involuntary motions, which now were so great and uncontrollable as nearly to forbid her standing or walking. She was ordered laxatives for the constipation, which was obstinate; and the pyrophosphate of iron in five grain doses, after each meal. This was the only treatment, from first to last. Her appetite, which had been capricious and uncertain, returned; the torpor of the bowels became less obstinate, and the involuntary jerkings of the muscles subsided to such a degree that the girl in two weeks walked to the Hospital unattended. In six weeks the menses returned, when the choreaic movements, which had become moderate, were greatly increased during their continuance. In the interval there was a continuous improvement, as the color of the face returned, but only a slight exacerbation during the next period. In three months the restoration to health was perfect. Perhaps the common forms of iron, as I have seen in two or three instances, might have been efficacious and attended with success, but I am confident the first stage of the cure would have been more tedious, from the constant muscular action which exhausts the patient. By the tranquilizing power of the phosphoric acid, the movements were moderated; the patient was enabled to fall asleep readily, which she could not do before, and the assimilation was strengthened, so that food and iron rapidly improved the blood.

In one other case of chorea and anæmic, the same happy result followed this course of treatment.

In palpitation of the heart in anæmic subjects, I have seen many instances of the power of this remedy in removing this symptom long before the blood was restored to its normal condition. But palpitation, when not due to impoverished blood entirely, may be, often times, equally amenable to this remedy.

A lady of this city, 45 years of age, feeble, emaciated, and the subject of paralysis agitans for many years, was tormented by an aggravated form of palpitation of the heart. This, at times, was very severe and persistent, and never benefitted

by a variety of medicines prescribed by different physicians. The cause of this irregular and tumultuous action was evidently due to the defect in the nervous influence. The pyrophosphate of iron gave her the most prompt and perfect relief, so much so, that she sent a person affected with this disease to my office to obtain the same prescriptions. In this case, also, the result was equally satisfactory. In even more grave disorders of the heart, the value of this remedy has been signally shown.

A young gentleman, 23 years of age, came to my office, suffering fearfully from angina pectoris. He was first attacked five years previously, whilst in the country, and was obliged to give up his employment and travel for health. After six months' respite he obtained some relief, but from that time he had been followed by returns of the paroxysms at frequent intervals, though much less severe until of late, when they had become more grave than ever before. There was a sense of agony; a fear of impending death; and he was conscious of an irregular, tumultuous, labored throbbing of his heart, even in sleep, which was fitful, unrefreshing and disturbed by frightful dreams. His countenance was haggard and bespoke the utmost dejection, and he felt as though his chest was tightly bound by a chord, and as if each pulsation of his heart would be the last.

On examination, no organic disease could be discovered. The heart contracted tumultuously—by fits and starts—with a rolling, tumbling, uncertain action, but spasmodically, and with a sharp, metallic ring. The pause was irregular and intermittent, and the volume of blood in the artery was uncertain and unequal.

Latterly the young man had been employed in a wholesale dry goods store, in New York, and had passed most of the day on an underground floor. As he appeared to suffer from considerable gastric and hepatic disorder, two cathartic doses of blue mass were given, and followed by vegetable bitters and antacids. These failing, he was ordered assa-fœtida, valerian, camphor, etc., with the like ill result. At this time, two weeks from his first visit, he was much worse, so much so, that he fell on the floor insensible one afternoon after returning from business. He was now directed to take the pyrophosphate of iron, in five grain doses, three times a day, and to omit all other medicines whatsoever. The patient remained under the same circumstances as to air, diet, exercise, etc., and still persisted, from a fear of losing his situation, in going to the store every day. There was a sensi-

ble amelioration in the severity of his symptoms almost immediately; which became very apparent in four or five days. Insensibly he began to sleep with tolerable comfort, and to experience a more regular and equable action of the heart. At times, he would lose a sense of his condition, which ever had followed him like a malignant spirit. The change in his countenance, in the state of his pulse and rhythm of the heart, as discovered by auscultation, was remarkable. The improvement was steady but rapid, until the restoration to health was complete, which took place in four weeks, without any change in, or any addition to, the prescription. Now, after an interval of more than two years, he remains in perfect health, and was enabled to rush to arms, with thousands of other compatriots, for the defence of the old flag and the constitution of our fathers. He endured three months' service as readily as the others. Since he returned I found, on examination, that his heart acts perfectly and normally.

A young married woman, never pregnant, 34 years of age, was admitted into the Hospital a year since. She was thought by her physicians to have an aggravated, organic heart disease, that had nearly run its course. Her present illness dated back some eight months, and apparently commenced with gastric and hepatic disorder, which gradually induced despondency, nervousness, and palpitation of the heart. She had a sallow complexion, loaded tongue, vomiting, which was frequent, of a bitter matter; a strong, tumultuous and irregular action of the heart, with a metallic ring; a sense of great suffering and a fear of impending death. She was gloomy, hopeless, hysterical, with many shifting neuralgic pains.—Shortly before her admission she lost the use of the lower extremities—could not stand, though when in bed she could draw up her feet, but with great effort and difficulty. I could discover in her case no evidences of organic disease, and was inclined to think that when the functional disorders of the liver and digestive organs were corrected, it would be possible to mitigate, at least, the irregular action of the nervous system which was supposed to be mostly of a hysterical character. A variety of means, such as blue mass, bismuth, creosote, quinine and bitters were employed for two weeks or more, to correct the state of the stomach, check the vomiting, and restore the digestion—which objects were partially attained; but nerve-aberrations continued the same as at first. The pyrophosphate was now given conjointly with vegetable bitters and good diet. The same happy result followed as in the last case. Gradually the use of her limbs, and the regular,

natural action of her heart were regained, though from the hysterical element in her case, the restoration to health was not as perfect or permanent as that of the young man just mentioned. She dwelt constantly on her troubles, and being much alone and neglectful of exercise, she relapsed, six months after dismissal, and was again treated in the same way, and in three weeks regained her usual health. During the present month I was called to her house and found her with the old symptoms, which she said had been coming on ever since the absence of her husband in the army. She requested the same medicine which had, the other times, been followed by such marked relief to the symptoms. Its power was equally apparent as before. For all the varied and anomalous symptoms of hysterical patients, which are usually some phase of irregular distribution of the nervous influence, the pyrophosphate acts with singular efficiency; diffusing and equalizing the nerve-power, and thus secondarily restoring a more active capillary circulation and a more healthful play of all the functions. Cases illustrative of this point are unnecessary in the milder forms of nervous disease, since the claims of our remedy are sufficiently vindicated in the severer ones hitherto mentioned.

The pyrophosphate of iron has another property scarcely to be expected, and one we should never discover except by actual observation. All of the common preparations of iron are apt to oppress the stomach, coat the tongue and destroy the appetite, especially when the patient is much debilitated. Many, from a delicate, sensitive organization, cannot, under any circumstances, take iron with profit, it being, in their language, too heating. The pyrophosphate is friendly to the stomach, will never cause any irritation of the gastric surfaces, and, to our knowledge, has never disagreed with any patient, however incompatible the other forms may have been.— Besides, it appears to possess a tonic power, and will restore the appetite and digestion after the failure of bitters, quinine, wine, etc., often in extreme cases of anæmia, amenorrhœa and chlorosis, as we have witnessed in many instances in our obstetric clinique. It seemed to afford just the grade of stimulus required by the stomach, and the improvement, thus initiated, continued without interruption, under this single remedy, to the complete cure of the patient. This acceptability, friendliness, corrigent and roborant action of this form of iron on the digestive organs is a valuable peculiarity which renders it, in many persons and in many states of disease, superior to all others, and perhaps to any drug whatsoever.

Besides, its tastelessness, when dissolved in syrup, is a great recommendation in this age of sugar, when patients desire to die *sweetly*, and will not endure anything nanseous or unpleasant, though death be knocking at the door. This, we might expect in children who *bring up* their parents to a tolerably high state of discipline, and issue their orders of command from the cabinet councils of the nursery. We medical men, taking the world as we find it, are obliged to render our doses as palatable as possible for babies, both great and small. This object, without detriment in the choice of our means, is singularly and notably attained by the use of the syrup of the pyrophosphate of iron.

REFLEX PARAPLEGIA.

BY THE EDITOR OF THE BRITISH MEDICAL JOURNAL.

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Perhaps one of the earliest and ablest writers on reflex paraplegia is Dr. Graves, in his lectures on paraplegia (1843).

Dr. Brown-Séquard is, however, the latest writer on the subject. He gives us an excellent account of the affection, and also a novel explanation of its nature—an explanation, however, which we fear must, for the present, remain hypothetical. Let us see what it is he tells us on this important subject.

The two most frequently observed and clearly defined forms of paraplegia are, reflex paraplegia, and paralysis depending upon myelitis or disease of the spinal cord. Heretofore there has been no proper line of distinction drawn by pathologists between these two varieties of paralysis; but this distinction is absolutely necessary for the important purposes of rightly directing the practitioner's treatment; medicines which are suitable in the one kind being injurious in the other.

Paraplegia depending upon disease or injury of the spinal cord has been long well understood by us all; but what is meant by *reflex paraplegia*? Is there really such a disease? By reflex paraplegia is meant that kind of paralysis of the lower limbs which results from an excitation of the spinal cord, the excitation being conveyed to the spine through a sensory nerve. For example, some part of the body,

say the uterus, is irritated, injured, or displaced; the effects of the displacement, etc., are appreciated by sensory nerves, and are thereby conveyed to the spinal nervous centre, and, by the action which they there produce, cause those changes to occur which result in paraplegia. According to Dr. Brown-Séquard, the paralysis is produced in the following way. The excitation aforesaid acts either upon the blood-vessels of the spinal cord itself or upon those of the motor nerves proceeding from it, or upon those of the muscle. This is what, pathologically speaking, is meant by reflex paraplegia. Through this excitation, spasmodic contraction of the blood-vessels is produced, and consequently a deficient supply of blood is sent to one or other of the aforesaid parts.

Dr. Brown-Séquard has, however, first of all, before proceeding to speak of its treatment, etc., to answer the objections of those who deny the existence of the affection; and there are a few men of high repute who do deny the thing. The answer of Dr. Brown-Séquard is, on the face of it, the best which can be given. He leaves transcendental physiology, and asks his readers to look at a plain series of facts which he unrolls before their eyes, and which are comprehensible to the understanding of the youngest and the oldest of us. To us, we must confess, these facts demonstrative are as "plenty as blackberries;" and we cannot imagine that any one except a *tête monté* physiologist, or an absolute specialist can refuse to accept the consequences which flow from them. A female suffers from paraplegia. Her uterus is displaced. The abnormal position of it is rectified, and the paralysis disappears. Amaurosis exists in combination with irritation of the frontal nerve; the frontal nerve is divided, reflex action from the irritated spot is cut off, and sight rapidly returns. Neuralgia of external parts exists: and the patient's auditory powers are good, bad, and indifferent, according to the absence, presence, and acuity of the neuralgia. Dentition, worms, irritation of the womb, diphtheritis, etc., are at times associated with various kinds of paralysis; and *sublatâ causâ tollitur effectus* has been duly observed in such cases.

Now, the proof that these paralyzes do not depend upon disease of the nervous centres is this very plain one: viz., that the removal of the peripheric irritation—the worms, the displaced womb, etc.—could not in such case have removed the paralysis. And if a very hardened sceptic in these matters should still object that, nevertheless, the cures in such cases might have been more properly called rather a coinci-

dence than a consequence, we should advise him to consult Dr. Brown-Séquard's book, and study his witnesses. The collection of cases there to be found, derived from numerous different sources, will, we fancy, demonstrate to the satisfaction of every one—except those who, apparently for argument's sake, will on occasion deny that B follows A in the alphabet—that *reflex paralysis* is a medical fact.

In these cases it will be seen, that what Dr. Brown-Séquard calls the *outside irritation* preceded the paraplegia, and that cure of the latter quickly followed the removal of the irritation. Again, in many of these cases, the paralysis increases and decreases with the condition of acuity of the outside irritation; and no treatment has any effect in removing the paralysis so long as the irritation was left unremoved. In some of the cases the paraplegia appeared, disappeared, and reappeared several times over with the appearance, disappearance, and reappearance of the outside irritation. "Can there," says Dr. Brown-Séquard, "be more decisive proofs than that it is the outside irritation starting from some sensitive nerves in various parts of the body, which produces the paraplegia?"

Besides, if we do not accept this view of the case, we are left without any means of explanation of the paralysis in most of these cases. The idea of these kinds of paralysis being produced by, for instance, pressure of the uterus on the obturator nerves or on the sacral plexus; or by the action of poisonous matters accumulating in the blood in retention of urine, or in diphtheritis, or enteritis, is very chimerical.

But, it is objected, we cannot accept this reflex paraplegia; for it is impossible to understand how it can occur. And here the physiologist steps in, and answers without hesitation—*les pièces à la main*—that on the contrary, it is very easy to show how a paralysis can take place by a reflex action starting from a sensitive nerve. And practitioners who pride themselves on being practical men, and *not* physiological physicians, must, we suppose, here take a lesson from the physiologist.

An outside irritation may produce paraplegia by *causing reflex contraction of blood-vessels* in two ways. It is proved beyond doubt, that blood-vessels have similar relations to the nervous system, to those which muscles of animal life have to this system. Blood-vessels contract with energy and sometimes pass into a state of prolonged spasm: 1. When their motor nerves are *directly* excited; and 2. When excited through the cerebro-spinal axis through irritation applied to some centripetal or excito-motor nerve. In *these contractions of blood-*

vessels we find the cause of paralysis. The contractions may occur: 1. In the blood-vessels of the spinal cord; 2. In the vessels of the motor nerve passing from the cord; and 3. In the vessels of the muscles themselves.

Dr. Brown-Séquard has, he tells us, seen contraction of the blood-vessels of the pia mater took place in the spinal cord, when the lobes of the kidney, or the vessels and nerves of the suprarenal capsules, were ligatured; and the contraction is generally greatest on that side of the cord corresponding with the side irritated. Paralysis of the lower limb has been known to follow extirpation of the kidney on the same side of the body. Again, reflex paraplegia may be produced by *insufficiency of nutrition*, resulting from this contraction of the blood-vessels. This explanation of the paraplegia as being a consequence of contraction of blood-vessels, must however, at present be received as theoretical.

Another argument in favor of this view of the case is derived from the fact of the normal condition of the spinal cord—the absence of all visible signs of disease—observed in persons who have died after presenting symptoms of reflex paraplegia associated with retention of urine.

Thus, then, here stand the facts touching Reflex Paraplegia: 1. There is no organic disease of spinal cord; 2. The paralysis will rapidly disappear when the source of reflex irritation is cut off; and 3. The vascular supply of cord, of motor nerves, and of muscles is under the influence of reflex action.

And now then, we see the grand anatomical distinction between reflex paralysis, and paralysis associated with myelitis. In the first case, there is diminished, in the second, increased vascularity of the cord. In myelitis, the color, the consistency, and the vascularity of the cord, are visibly changed. In reflex paraplegia, these qualities of the cord are found, to all appearance, unaltered after death. And here, therefore, as Dr. Brown-Séquard tells us, we have at once before us two groups of paraplegic diseases—one in which too much blood is circulating in the spinal cord, and one in which the very opposite condition of the cord exists. And then, he adds, consider the value of a right discrimination between them. The remedies which suit one group are actually injurious to the other. There are some, and he says that he can prove the fact, that diminish the amount of blood in the spinal cord; and there are others that increase the quantity. And yet, these remedies are often blindly and indiscriminately employed in paraplegia. Mercury, ergot of rye, and belladonna, Dr. Brown-Séquard asserts diminish the blood, and strychnine and brucia increase the blood in the spinal cord.

[In most cases, reflex paraplegia may be characterized as follows:—

There is an absence of the special symptoms which indicate organic disease of the spine; the paralysis is incomplete, and has slowly supervened upon an affection of an urinary, a genital, or some abdominal organ, upon inflammation of the lungs or pleura, or after irritation of a nerve in its trunk or cutaneous ramifications. In most cases of paraplegia, we must form our judgment as to its nature from a consideration of these conditions.

The following are the distinctions which Dr. Brown-Séquard has collected together and given as characteristic of the two best marked varieties of reflex and centric paraplegia—urinary paraplegia and myelitic paraplegia.

Urinary paraplegia is preceded by an affection of the urinary organs. The paralysis is incomplete, and varies in degree with the varying conditions of these organs. The lower limbs alone are usually affected, and the paralysis does not extend upwards. Reflex power is not wholly lost or is much exalted. Rarely do spasms seize the paralyzed muscles; nor is there pain in the spine, nor sense of constriction of the abdomen; neither formication, nor pricking, nor anæsthesia. Rarely is the bladder or rectum paralyzed; there is much gastric disturbance; and lastly, recovery often takes place rapidly, after notable amelioration of the urinary affection.

On the other hand, in *myelitic paraplegia*, the affection of the urinary organs does not precede, but is a consequence of, the spinal disease. The paralysis is complete, and is unaffected by changes in the condition of the urinary organs. Other parts beside the lower limbs are usually paralyzed, and paralysis gradually extends upwards. Reflex power is often lost, but sometimes much increased. There are always spasms and some amount of pain; also formication, pricking, etc.; feeling of abdominal constriction, and almost always anæsthesia or numbness. There is no gastric disturbance. The disease usually slowly progresses to a fatal termination, and rarely ever is there a complete recovery. Moreover, the urine in myelitis is alkaline; whilst in reflex paraplegia not depending upon urinary diseases it is usually natural.

In considering the *prognosis* of reflex paraplegia, we must, according to Dr. Brown-Séquard, reflect that there are two forms of the affection; that in one of these forms, the paraplegia depends upon a defect in the nutrition of the spinal cord; and in the other upon an alteration of nutrition in the

muscles of the lower limbs. The first of these forms is almost always curable, provided the external irritating cause be removable. But, in the second case, recovery rarely takes place, even though the provoking cause of the paraplegia be removed; and the reason is, that in this form the muscles have become rapidly atrophied and altered. Hence as a matter of prognosis, it is always important to know, in a case of reflex paraplegia, whether or not rapid atrophy of the muscles has occurred.

The *treatment*—or to speak more correctly, the indications for treatment, of reflex paraplegia spring naturally from the pathology of the disease as here laid down. The first indication evidently is to remove the local irritation, the cause of the affection; and this necessarily involves the consideration of the treatment of nephritis, cystitis, enteritis, morbid states of the uterus, in fact, of all those morbid conditions with which the paraplegia may be associated. In carrying out this treatment, we must also endeavor to diminish the sensibility, or interrupt the nervous influence which passes from the diseased organ or nerve to the spinal cord, to paralyze the nervous sensation. For this purpose says Dr. Brown-Séquard, no narcotising agent is more powerful than belladonna; but, in some cases, caution is required in its use. In disease of the urethra, or prostate, one grain of the extract of belladonna in twenty drops of laudanum should be injected into the urethra, and washed away after half-an-hour or an hour's residence there. This treatment should be repeated every two or three days; thirty drops of laudanum alone being injected on the intervening days. In bladder-disease, the aforesaid solution of belladonna is to be injected after evacuation of the urine; and then the sole laudanum injection on alternate days. Suppositories of these two agents may also be employed.

If the irritation radiate from the vagina or uterus, then a pill of half a grain of belladonna, with one grain of extract of opium, enclosed in a piece of cotton wool, may be passed well up into the vagina—a practice of M. Trosseau's, which Dr. Brown-Séquard much extols. Should the stomach, or the intestines, or kidneys, etc., be the seat of local irritation, then opium should be taken by the mouth.

Dr. Graves has strongly recommended excitants or revulsives to be applied to the skin of the legs; and Dr. Brown-Séquard gives a theoretical explanation of their beneficial mode of action. They produce a *similia similibus* effect. We have seen that the disease, according to Dr. Brown-Séquard, results from a contraction of the smaller blood-vessels;

but if this contraction be considerable, the muscular fibres of the vessels become exhausted, and then (by a well-established physiological law) they are relaxed, and so there follow dilatation of blood-vessels and admission of due flow of blood to the spine. Now, no irritating cause is more powerful in effecting contraction of blood-vessels by reflex action than cold; and, consequently, this sort of excitation alternated with heat, should be applied to the spine. But, whatever be the kind of excitation employed in this case, it ought to be very powerful, in order to produce that exceeding degree of contractility of muscular fibres which is found, experimentally, to be followed by exhaustion and dilatation.

We fancy that to the theoretical explanation given by Dr. Brown-Séquard (for we must still call it such,) of the cause of reflex paraplegia, our readers will not at present be prepared to give their unqualified adhesion. To us, we must say that a tonic permanent spasm of the blood-vessels, such as is supposed by him to be the permanent state of the blood-vessels of some of the nerves or of the spinal cord in reflex paraplegia, is quite incomprehensible; and we think that on this point, which is assuredly the great point of Dr. Séquard's labors in this direction, he would have done well to have more fully developed the basis of his conclusion. Surely it is not enough to satisfy us on this head, that Dr. Brown-Séquard *has seen* a contraction of the blood-vessels in the spinal cord when a "tightened ligature was placed around the hilus of a kidney." *Permanent* contractions of blood-vessels of this character are surely contrary to what experience teaches us in other cases; and if they really exist, how comes it that the cord does not become organically affected through such a cutting off of its nutritive supply?

Keeping this idea of the cause of the paraplegia in view, Dr. Brown-Séquard recommends that the patient, during the night, and, as far as may be, during the day, should lie in that position which would favor (by gravity) the flow of blood to the spine. As regards general treatment, this should consist in tonics and generous food; the partially paralyzed muscles being as much exercised as possible in the open air.

Strychnia. Dr. Brown-Séquard says, is of the greatest use in this affection. It is the only remedy which really deserves confidence. It increases the amount of blood in the spinal cord, and (acting in a special and direct manner on the tissue of the cord) it increases the reflex faculty; the amount of blood and of the reflex faculty being, as propounded, below par in these cases. It may be given with opium in doses of

one-thirtieth to one-fortieth of a grain a day, and when used alone, in daily doses of one-twentieth of a grain. When employed with belladonna its dose must be larger, to compete with the antagonistic action of the belladonna. And hot and ice-cold douches may be applied to the spine alternately to produce that violent degree of spasm of the blood-vessels which is followed by their relaxation.

Besides this, the muscles of the paralysed limbs should be duly exercised, to prevent their becoming wasted and atrophied. It is therefore important to have them galvanized two or three times a week, and the limbs properly shampooed. If necessary, also, the heat of the limbs must be artificially kept up; remembering always that, unless the *primum mobile* of the paralysis—the local irritation—be removed, we can expect no permanent cure.

Book Notices.

BORDER LINES OF KNOWLEDGE, in some Provinces of Medical Science. An Introductory Lecture, delivered before the Medical Class of Harvard University, November 6th, 1861. By OLIVER WENDELL HOLMES, M. D., Parkman Professor of Anatomy and Physiology. Boston: Ticknor and Fields. 1862.

In one of the characteristic lectures of Horace Mann, he introduces, very happily, the following figure:—"The Germans and French have a beautiful phrase, which would enrich any language that should adopt it. They say, '*To orient*;' or '*to orient one's self*!'"

"When a traveller arrives at a strange city, or is overtaken by night, or by storm, he takes out his compass and learns which way is the East, or Orient. Forthwith all the cardinal points—east, west, north, south—take their true places in his mind, and he is in no danger of seeking for the sunset or the pole-star in the wrong quarter of the heavens. *He orients himself.*"

In the little volume of eighty pages before us, Prof. HOLMES has furnished, not only the student, but the practitioner, a compass, whereby he that cares to accurately define his position with reference to what has been accomplished, may orient himself, as he starts in quest of the vast spaces, yet enclosing

infinite unknown details in Chemistry, Anatomy and Physiology. These, *par excellence*: for when HOLMES assumes to treat of the healing arts—medicine and surgery—when he leaves his closet for the sick-chamber, and drops his scalpel and lens, with which he has been questioning the inanimate fibre of the cadaver, to note the living wheels of the pulsing, breathing organism, rudely jarring and clashing in the disorder of disease, or broken in the shock of wounds and lesions, he, himself, needs to *orient*—at least, he forgets to allow for the variation of his magnetic needle—a variation in his scientific system, very evidently increasing in a swifter ratio, than the 4' annually allowed the symbol of constancy and guidance.

Dr. HOLMES is, as every man must be, who devotes himself exclusively to the closet-study of theoretical or preliminary branches, wanting in practicability; wanting in that confidence and knowledge which comes only by experience, by the application in daily practice, of the theories and speculations of the laboratory and dissecting room. This is the *experimentum crucis*, by which remedies—surgical and medical—must stand or fall; and not all the polished satire, brilliant antitheses, and poetic fancy, of even a HOLMES, can do more than evanescently swerve the decision.

The world of Medical Science is boundless; and if, in some departments, Prof. HOLMES' sway is undisputed, there is no danger as yet, of his being reduced to the lachrymose condition of Alexander, or of reversing the saying of the Father of medicine, which he avers he cannot forget—*Ars longa, judicium difficile*. Let the glory he has reaped with the scalpel and the poet's plume satisfy him, then, without essaying the wholesale destruction of the labors of such men as Pereira and Dunglison, Wood and Bache, Headland, Christison, Trousseau, and scores of others, not less eminent in their respective spheres, than the Anatomist of Harvard in his.

Of course, every page of the *Border Lines*, sparkles with gems of poesy and fancy, until the hard lines of science assume the brilliant hues of fairy-tales, and truth, stranger than fiction, comes near to losing her own identity. We quote, here and there, from the well-printed page:—

It (Chemistry) is accomplishing wonders before us every day, such as Arabian story-tellers used to string together in their fables. It spreads the sensitive film on the artificial retina which looks upon us through the optician's lens for a few seconds, and fixes an image that will outlive its original. It questions the light of the sun, and detects the vaporized metals floating around the great luminary,—iron, sodium, lithium, and the rest,—as if the chemist of our remote planet could fill his bell-glasses from the fiery atmosphere.* It lends the power which flashes our messages in thrills that leave the lazy chariot of day behind them. It seals up a few dark grains in iron vases, and lo! at the touch of a single spark, rises in smoke and flame a mighty Afrit with a voice like thunder and an arm that shatters like an earthquake. The dreams of Oriental fancy have become the sober facts of our every-day life, and the chemist is the magician to whom we owe them. * * * * *

These facts of allotropism have some corollaries connected with them rather startling to us of the nineteenth century. There may be other transmutations possible besides those of phosphorus and sulphur. When Dr. Prout, in 1840, talked about azote and carbon being “formed” in the living system, it was looked upon as one of those freaks of fancy to which philosophers, like other men, are subject. But when Professor Faraday, in 1851, says at a meeting of the British Association, that “his hopes are in the direction of proving that bodies called simple were really compounds, and may be formed artificially as soon as we are masters of the laws influencing their combinations,”—when he comes forward and says that he has tried experiments at transmutation, and means, if his life is spared, to try them again,—how can we be surprised at the popular story of 1861, that Louis Napoleon has established a gold-factory and is glutting the mints of Europe with bullion of his own making! * * * * *

This is the place, if anywhere, to mention any observations I could pretend to have made in the course of my teaching the structure of the human body. I can make no better show than most of my predecessors in the well-reaped field. The nucleated cells found connected with the cancellated structure of the bones, which I first pointed out and had figured in 1847, and have shown yearly from that time to the present, and the *fossa masseterica*, a shallow concavity on the ramus of the lower jaw, for the lodgment of the masseter muscle, which acquires significance when examined by the side of the

* Scientific Annual for 1861, — FAIRBAIRN'S Address before the British Association, 1861.

deep cavity on the corresponding part in some carnivora to which it answers, may perhaps be claimed as deserving attention. I have also pleased myself by making a special group of the six radiating muscles* which diverge from the spine of the axis, or second cervical vertebra, and by giving to it the name *stella musculosa nuchæ*. But this scanty catalogue is only an evidence that one may teach long and see little that has not been noted by those who have gone before him. * *

It is curious that the Japanese should have anticipated Europe in a kind of rude regional anatomy. I have seen a manikin of Japanese make traced all over with lines, and points marking their intersection. By this their doctors are guided in the performance of acupuncture, marking the safe places to thrust in needles, as we buoy out our ship-channels, and doubtless indicating to learned eyes the spots where incautious meddling had led to those little accidents of shipwreck to which patients are unfortunately liable. * * *

But the great triumph of the microscope as applied to anatomy has been in the resolution of the organs and the tissues into their simple constituent anatomical elements. It has taken up general anatomy where Bichat left it. He had succeeded in reducing the structural language of nature to syllables, if you will permit me to use so bold an image. The microscopic observers who have come after him have analyzed these into *letters*, as we may call them,—the simple elements by the combination of which Nature spells out successively tissues, which are her syllables, organs which are her words, systems which are her chapters, and so goes on from the simple to the complex, until she binds up in one living whole that wondrous volume of power and wisdom which we call the human body.

The alphabet of the organization is so short and simple, that I will risk fatiguing your attention by repeating it,—according to the plan I have long adopted.

A. Cells, either floating, as in the blood, or fixed, like those in the cancellated structure of bone, already referred to. Very commonly they have undergone a change of figure, most frequently a flattening which reduces them to scales, as in the epidermis and the epithelium.

B. Simple, translucent, homogeneous solid, such as is found at the back of the cornea, or forming the intercellular substance of cartilage.

* *Rectus capitis posticus major, obliquus capitis inferior* and *semispinalis colli*, on each side.

C. The white fibrous element, consisting of very delicate, tenacious threads. This is the long-staple textile substance of the body. It is to the organism what cotton is pretended to be to our Southern States. It pervades the whole animal fabric as areolar tissue, which is the universal packing and wrapping material. It forms the ligaments which bind the whole framework together. It furnishes the sinews, which are the channels of power. It enfolds every muscle. It wraps the brain in its hard, insensible folds, and the heart itself beats in a purse that is made of it.

D. The yellow elastic, fibrous element, the caoutchouc of the animal mechanism, which pulls things back into place, as the india-rubber band shuts the door we have opened.

E. The striped muscular fibre,—the red flesh, which shortens itself in obedience to the will, and thus produces all voluntary active motion.

F. The unstriped muscular fibre,—more properly the fusiform-cell fibre, which carries on the involuntary internal movements.

G. The nerve-cylinder, a glassy tube, with a pith of some firmness, which conveys sensation to the brain and the principle which induces motion from it.

H. The nerve-corpuscle, the centre of nervous power.

I. The mucous tissue, as Virchow calls it, common in embryonic structures, seen in the vitreous humor of the adult.

To these add X, granules, of indeterminate shape and size, Y, for inorganic matters, such as the salts of bone and teeth, and Z, to stand as a symbol of the fluids, and you have the letters of what I have ventured to call the alphabet of the body.

But just as in language certain diphthongs and syllables are frequently recurring, so we have in the body certain secondary and tertiary combinations, which meet more frequently than the solitary elements of which they are composed.

* * * We do not know where we now stand in the hierarchy of created intelligence. We were *made* a little lower than the angels. I speak it not irreverently; as the lower animals surpass man in some of their attributes, so it may be that not every angel's eye can see as broadly and as deeply into the material works of God as man himself, looking at the firmament through an equatorial of fifteen inches' aperture, and searching into the tissues with a twelfth of an inch objective.

But if we continue in this manner, we shall get two-thirds of the volume in our pages; and then, if we did as we want to, would go back and add the remainder.

COMMENTARIES ON THE SURGERY OF THE WAR IN PORTUGAL, SPAIN, FRANCE AND THE NETHERLANDS, from the Battle of Roliça in 1808, to that of Waterloo in 1815; with Additions relating to those in the Crimea in 1854-55, showing the improvements made during and since that period in the great Art and Science of Surgery, on all the subjects to which they relate. Revised to October, 1855, by G. J. GUTHRIE, F. R. S. Sixth edition. Philadelphia: J. B. Lip-pencott & Co., 1862.

This long and eccentric title pertains to a most valuable contribution to the literature of the Surgery of War. The nucleus of the work was originally put forth in the form of lectures published in the *London Lancet*. Subsequent changes and additions have expanded them into a duodecimo of six hundred and fourteen pages. The following criticisms and extracts will give a fair idea of the contents of the work :

Lecture 1st gives an account of the phenomena of bullet wounds, describing their course, points of entrance and exit of the missile, the progress and results of the inflammation following, and the proper treatment. The following judicious directions are worthy of note :

The treatment of simple gunshot or flesh wounds should be, under ordinary circumstances, as simple as themselves. Nothing should be applied but a piece of linen or lint, wetted with cold water; this may be retained by a strip of sticking plaster, or any other thing applicable for the purpose of keeping the injured part covered. A compress of linen, or other similar substance, moistened with cold or iced water when procurable, will be useful; and a few inches of a linen bandage may be sewed on, to prevent the compress from changing its position during sleep. When the wound becomes tender, a little oil, lard, or simple ointment may be placed over it. A roller, as a surgical application, is useless, if not injurious. At the first and second battles in Portugal, every wound had a roller applied over it; it soon became stiff, bloody, and dirty. They did no good, were for the most part cut off with scissors, and thus rendered useless. When really wanted, at a later period, they were not forthcoming. An advancing army cannot, and ought not to carry casks full of rollers into the field; and the apothecary-general had better have instead, two casks or boxes full of good wax candles; for, although every regimental surgeon ought to have four in his panniers, kept as carefully for emergencies as his capital instruments, they will

require from time to time to be replaced. No roller should be more than two inches and a quarter wide, and made of good, strong, coarse linen, very much, in fact, the reverse of the rollers which have until lately been supplied to the army.

Cold or iced water may be used as long as cold is grateful to the sufferer. When it ceases to be so, it should be exchanged for warm, applied in any convenient way which modern improvements have suggested, whether by piline, gutta percha, oiled silk, etc. An evaporating poultice may be used in private life, but no poultices should be permitted in a military hospital, until the principal surgeon is satisfied they are necessary. They are generally cloaks for negligence, and sure precursors of amputation in all serious injuries of bones and joints. They are properly used to alleviate pain, stiffness, swelling, the uneasiness arising from cold, and to encourage the commencing impeded action of the vessels toward the formation of matter. As soon as the effect intended has been obtained, the poultice should be abandoned, and recourse again had to water, hot or cold, with compress and bandage. I was in the habit of calling a poultice, when misapplied, a *cover-slut*.

The last part of the lecture speaks of bayonet wounds, which, however, are rarely met with, as troops charging with the bayonet seldom actually meet, the terror of the weapon alone being sufficient to cause one or the other party to fly. The author introduces the following incident which is sufficiently amusing, but it is difficult to see what light it throws upon the the subject of bayonet wounds :

A certain fighting regiment had the misfortune one very misty morning to have a large number of men carried off by a charge of the Polish lancers, many being also killed. The commanding officer concluded they must be all killed, for his men possessed exactly the same spirit as a part of the French Imperial guard at Waterloo. "They might be killed, but they could not by any possibility be taken prisoners." He returned them all dead accordingly. A few days afterward they reappeared, to the astonishment of everybody, having been swept off by the cavalry, and had made their escape in the retreat of the French army through the woods. The regiment from that day obtained the ludicrous name of the "Resurrection men."

Lecture two discusses traumatic erysipelas, simple inflammation, and mortification. The discussion of erysipelas is ex-

ceedingly meagre, in amount and lacks correctness in principle. The author seems unaware of the peculiar specific and poisonous character of the disease, and advises almost the same depletory treatment which would be appropriate in a simple inflammation. It is too bad that at this late day a distinguished author does not know that erysipelas is essentially a depressing disease, and that to rely on ordinary anti-phlogistics, such as purgatives and bleeding, is to the last degree injurious.

Lecture third commences by showing that when a limb is injured beyond hope of preservation, the amputation should be primary, and not secondary, and the following precepts are given on the subject :

When the wound of an extremity is of so serious a nature as to preclude all hope of saving the limb by scientific treatment, it should be amputated as soon as possible.

An amputation of the upper extremity may almost always be done from the shoulder-joint downward, without much risk to life. When necessary, the sooner it is done the better.

An amputation of any part of the lower extremity below the knee may be done forthwith, with nearly an equal chance of freedom from any immediate danger, as of the upper extremity at or near the shoulder-joint.

It is otherwise with amputations above the middle of the thigh, and up to the hip-joint. They are always attended with considerable danger.

There can be no doubt that if the knife of the surgeon could in all cases follow the ball of the enemy or the wheel of a railway carriage, and make a clean good stump, instead of leaving a contused and ragged wound, it would be greatly to the advantage of the sufferer ; but as this cannot be, and an approach to it even can rarely take place, the question naturally recurs,—At what distance of time, after the receipt of the injury or accident, can the operation be performed most advantageously for the patient ?

In order to answer this question distinctly, it should be considered with reference to distinct places of injury :

1st. When injuries require amputation of the arm below the shoulder-joint, or of the leg below the knee, these operations may be done at any time from the moment of infliction until after the expiration of twelve or twenty-four hours, without any detriment being sustained by the sufferer with regard to his recovery ; although every one, under such circumstances,

must be desirous to have the operation over. The surgeon having several equally serious cases of injury of the head or trunk brought to him at the same time as two requiring amputation of the upper extremity, may defer the latter more safely perhaps than the assistance he is also called upon to give to the other cases, the postponement of which may be attended with greater danger.

2d. This state embraces those great injuries in which the shoulder is carried away with some injury to the trunk; or the thigh is torn off at or above its middle, rendering an amputation of the upper third, or at the hip-joint, necessary. It is this or nearly this state which alone implies a doubt as to the propriety of immediate amputation, and demands further investigation. It is the state to which attention is earnestly drawn for future observation.

One of the most interesting theoretical points in this chapter is the distinct recognition by the author of two kinds of phlebitis,—the adhesive and the suppurative,—or, rather, the plastic and the aplastic; and that the plastic form almost always terminates in recovery, while the aplastic variety, with equal certainty, ends in death. He claims to have promulgated this idea forty years ago; but it is unfortunate that neither he nor other surgeons seem to have drawn from it the requisite practical inference,—that the proper treatment in these cases is to make sure, by appropriate medication, that the inflammation, if it occur, shall be of the plastic form.

For several lectures the subject of amputations is discussed in an interesting but somewhat rambling manner. The amputation at the hip-joint comes in for discussion under this head. In the Crimean war, every case of this kind died, and in the Napoleonic wars the operation was almost equally fatal, though a few cases survived. This terrible result has led to an attempt to save life by resection of the head of the femur, in case of gunshot fractures of the head, neck or trochanteric portion of the shaft. There is no doubt that the resection should be preferred to the amputation in all cases except where the injury to the vessels ensures gangrene of the limb. The excision of the head of the femur is by no means a very dangerous operation of itself, as has often been proved by the

writer of this review, in civil surgery. It is very difficult, however, for an inexperienced army surgeon, when he sees a small bullet hole in the upper part of the thigh, which has fractured the femur, with neither hæmorrhage nor great pain, to make up his mind that the patient is bound inevitably to death unless an excision is performed. Among the wounded at Fort Donelson an opportunity was afforded to observe the reluctance of surgeons to sacrifice the head of the femur after fracture, even when the same men would amputate an arm for a very bad flesh-wound, unaccompanied by fracture or injury of the vessels,—so much are persons influenced by the external appearances of things.

Some valuable tables of statistics are also given in this chapter, showing the results of capital operations of various kinds.

Lecture eighth treats in a masterly manner of hospital gangrene. We had marked several passages for extract, but have only space for the following

CONCLUSIONS.—*First*.—Hospital gangrene never occurs in isolated cases of wounds.

Second.—It originates only in badly-ventilated hospitals, crowded with wounded men, among and around whom cleanliness has not been too well observed.

Third.—It is a morbid poison, remarkably contagious, and is infectious through the medium of the atmosphere applied to the wound or ulcer.

Fourth.—It is possibly infectious, acting constitutionally, and producing great derangement of the system at large, although it has not been satisfactorily proved that the constitutional affection is capable of giving rise to local disease, such as an ulcer; but if an ulcer should occur from accidental or constitutional causes, it is always influenced by it when in its concentrated form.

Fifth.—The application of the contagious matter gives rise to a similar local disease, resembling and capable of propagating itself, and is generally followed by constitutional symptoms.

Sixth.—In crowded hospitals the constitutional symptoms have been sometimes observed to precede, and frequently to accompany, the appearance of the local disease.

Seventh.—The local disease attacks the cellular membrane principally, and is readily propagated along it, laying bare the

muscular, arterial, nervous, and other structures, which soon yield to its destructive properties.

Eighth.—The sloughing of the arteries is rarely attended by healthy inflammation, filling up their canals by fibrin, or by that gangrenous inflammation which attends on mortification from ordinary causes, and alike obliterates their cavities. The separation of the dead parts is, therefore, accompanied by hæmorrhage, which, when from large arteries, is usually fatal.

Ninth.—The operation of placing a ligature on the artery at a distance, or near the seat of mischief, does not succeed, because the incision is soon attacked with the disease, unless it has been arrested in the individual part first affected, and the patient has been separated from all others suffering from it.

Tenth.—The local disease is to be arrested by the application of the actual or potential cantery: an iron heated red hot, or the mineral acids pure, or a solution of arsenic, or of the chloride of zinc, or of some other caustic which shall penetrate the sloughing parts, and destroy a thin layer of the unaffected part beneath them. If a sinns or sinuses have formed under the skin or between the muscles, from the extension of disease in the cellular or areolar structure, they must be laid open, and the cautery applied; for if any part affected be left untouched or undestroyed by the acid, the disease will recommence and spread from that point. The parts touched by the acids or cautery may be defended by cloths or other material, wetted with hot or cold water according to the feelings of the sufferers, and poultices of various kinds may be had recourse to, if unavoidable.

Eleventh.—After the diseased parts have been destroyed by the actual or potential cautery, they cease in a great measure to be contagious, and there is less chance of the disease being propagated to persons having open wounds or ulcerated surfaces. A number of wounded thus treated are less likely to disseminate the disease than one person on whom constitutional treatment alone has been tried.

Twelfth.—The pain and constitutional symptoms occasioned by the disease, considered as distinct from the symptoms which may be dependent on disease endemic in the country, are all relieved, and sometimes entirely removed, by the destruction of the diseased surface, which must, however, be carefully and accurately followed, to whatever distance and into whatever parts it may extend, if the salutary effect of the remedies is to be obtained.

Thirteenth.—On the separation of the sloughs, the ulcerated surfaces are to be treated according to the ordinary principles of surgery. They cease to eliminate the contagious principle, and do not require a specific treatment.

Fourteenth.—The constitutional or febrile symptoms, whenever or at whatever time they occur, are to be treated according to the nature of the fever they are supposed to represent, and especially by emetics, purgatives, and the early abstraction of blood if the fever be purely inflammatory, and by less vigorous means if the fever prevailing in the country be of a different character. Pain should be alleviated by opium, which should be freely administered.

Fifteenth.—The essential preventive measures are separation, cleanliness, and exposure to the open air,—the first steps toward that cure which canterization will afterward in general accomplish.

Sixteenth.—If the sufferer be very young, or of a weakly habit, his strength will frequently require to be supported in the most efficient manner by a due administration of cinchona bark, wine, and a generous diet,—means often found essentially necessary after all severe attacks of debilitating diseases.

The formidable nature of this terrible disease, before the local application of caustic remedies was fully adopted, will be best understood by the following document.

Return of the number of cases of Hospital Gangrene which have appeared at the Hospital Stations in the Peninsula between 21st June and 24th December, 1813:—

STATIONS.	No. of cases occurred.	Discharged cured.	Died.	Under treatment.	No. operated upon.	REMARKS.
Santander.....	160	72	35	53	25	Most of these cases were sent from Vittoria.
Bilbao	972	557	387	28	183	
Vittoria.....	441	349	88	4	74	Thirty-seven transferred to Santander.
Passages.....	41	2	2			
Vera .....	....	....	....	....	....	Vera, being almost on the field of battle, had no case.
	1614	980	512	85	282	

Lecture eighteenth gives a discussion of gunshot wounds of the skull. The examination of this topic shows that the ten-

dency of the experience in modern wars is to discourage the operation of trephining. When a bullet has entered the brain, it drives before it comminuted fragments of skull, hair, pieces of clothing, etc. In such circumstances the ball is, in almost all cases, out of reach, and there is nothing which the trephine can do except to increase the danger. Foreign bodies near the orifice must be picked out, cold wet dressings applied, and any tendency to inflammatory fever kept down by suitable antiphlogistics; but trephining should only be made use of to enlarge the orifice, for the extraction of foreign bodies too large to be removed otherwise, or to relieve symptoms of compression. The mortality seems from some statistics to be greater in the cases trephined, than in those left to nature.

Lectures twenty and twenty-first are upon camp pneumonia and bronchitis, which are discussed with a fair degree of ability. The author gives judicious instructions to avoid bleeding in pneumonia of the typhoid type, but seems to be wholly ignorant of the use of *veratrum viride*, by means of which American practitioners reduce the inflammation without loss of blood: he therefore falls back upon calomel and opium. I do not know how it is in the English army, but in this country we find the use of calomel in typhoid pneumonia to be highly injudicious, unless very sparingly given. The prisoners at *Camp Douglas* have at the present time among them some two hundred cases of this form of pneumonia, resulting from their terrible exposure to snow, rain and mud at *Fort Donelson*. We find tartar emetic inadmissible for the most part in consequence of its tendency to induce a dangerous diarrhœa, and mercurials are pretty much excluded by their depressing influence. We rely therefore on a combination of *veratrum viride* and laudanum during the first stages, with dover's powder, and sometimes chlorate of potash as adjuvants. A little later we resort to quinine, tinct. cinchona, tinct. iron, and other tonics.

The work before us contains some remarks upon the subject of anæsthetics. High authorities in the British army were opposed to their use in the Crimea, nevertheless, they were very

extensively employed in all the divisions of the English forces except one, and among all the French troops without exception. Only one death occurred from their use among the former, and not a single one among the latter. The results of military experience are in favor of anæsthetics; and for the hurried operations of the field, the prompt action and small bulk of chloroform will give it preference over other agents; but in post hospitals, where more leisure is allowed, a mixture of chloroform and ether, or ether alone, should be employed, on account of its greater safety. E. A.

Editorial.

AMERICAN MEDICAL ASSOCIATION: FURTHER POSTPONEMENT.—We, the undersigned Committee of Arrangements of the American Medical Association, after free consultation with officers and members in each important section of the country, accessible to the Committee, feel constrained to give notice to the profession, that the Regular Annual Meeting of the Association is further postponed until the first Tuesday in June, 1863.

CHICAGO, March 20, 1862.

N. S. DAVIS,	}	<i>Committee.</i>
J. BLOODGOOD,		
J. W. FREER,		
H. W. JONES,		
E. ANDREWS,		
D. LASKIE MILLER,		
THOMAS BEVAN.		

We call the attention of our readers to the above notice.—In our last number, we expressed the hope that the Association would hold its regular meeting in June next. But out of quite a large number of letters received from influential members of the Association, all but *two* advised a further postponement. Of course we cheerfully acquiesce in the decision of the Committee, founded as it appears to be, on the wishes of

a majority of the profession. We hope and trust that another year will find all the obstacles to a truly great *national* meeting removed, and we shall have the pleasure of again seeing our brethren of the profession from Maine to Texas, assembled in cordial, scientific and social communion.

CLOSE OF THE MEDICAL COLLEGE TERMS IN THIS CITY—PROSPERITY OF THE COLLEGES—PROSPECTS FOR THE FUTURE.—In the preceding number of the EXAMINER we announced the closing exercises of the Lind University, which took place on the 4th inst. The annual term in the Rush Medical College had closed a month earlier. The winter passed pleasantly, and so far as we know, satisfactorily, in both schools.

We are informed that the class in the Rush Medical College was about 120, and the number of graduates 36; which is about the average of annual attendance in that school for the last six years. The Medical Department of the University, which was organized only three years since, opened the first year with a class of 33 students, of whom 9 graduated.

The second year opened with 51 students, of whom 12 graduated; while the class for the term just closed, numbered 63 students, of whom 16 graduated. This not only shows a healthy and very satisfactory degree of prosperity on the part of the University School, but already places it alongside of the Albany and New York Medical Colleges; and quite in advance of the Medical Departments of Boudoin, Yale, and some of the older schools of the East. We are all the more gratified, that this prosperity, has not been accompanied by any corresponding diminution of the classes in the Rush Medical College. When, three years since, we took an active part in organizing the Medical Department of the University, some were ready to censure us, on the ground that it would only result in dividing the patronage, already too sparingly bestowed on the only School then in existence here. We then claimed that the organization of a new School, with a longer lecture term, a more numerous Faculty, a more systematically arranged, and much more comprehensive course of instruction,

so far from injuring the Rush Medical College, would only serve to excite the Faculty to greater exertions, by which her classes would be retained, and perhaps increased; while the new School would attract hither an entirely new and different class of students, thereby simply *adding to*, instead of dividing the aggregate number of students annually educated in this metropolis of the North-West. Thus far our predictions have been fully verified in practical results. Only three years have passed, and already the aggregate number in attendance at the two Schools is nearly *double* that which was in attendance on the one before the second was organized. And what is equally important, the competition has caused a far more active development of all the collateral departments, and means of medical advancement, such as better means of illustration in all the branches, and especially more extensive demonstrations with the microscope in histology; by vivisections in physiology; more extensive clinical courses; and the addition of well organized summer instruction; all of which has redounded greatly to the advantage of the Medical Classes. We say then, to the profession of the North-west, that the cause of Medical teaching and education in Chicago, is upward and onward; and that students can find here in our Schools and Hospitals, and Dispensaries, as good facilities for obtaining a thorough medical education, as in any other city in the Union.

DEATH OF DR. J. N. GRAHAM.—At a regular meeting of the Chicago Medical Society, Drs. N. S. DAVIS and D. D. WAITE were appointed a Committee to draft resolutions expressive of the feelings of the Society towards the deceased.

Dr. GRAHAM had been a resident of the city eight or ten years, and so long as his health permitted, was an active and highly esteemed member of our local Medical Societies. He was a physician of more than ordinary intelligence; kind, charitable, and faithfully devoted to his profession. He was highly respected and beloved, not only as a physician, but as a Christian of deep piety, by a large circle of acquaintances and friends.

The Committee reported the following resolutions, which were unanimously adopted, viz:

Resolved, That in the death of JOSEPH N. GRAHAM, M. D., this Society has lost one of its most active and esteemed members; the profession one of its most zealous and faithful cultivators; and the community one of its most amiable, intelligent, and devoted professional servants.

Resolved, That we deeply sympathize with his bereaved family and more intimate circle of relations and friends.

Resolved, That the foregoing be published in the Medical Journals, and a copy transmitted to the family of Dr. GRAHAM.

THE COUNTRY PRACTITIONER.—From an *Annual Address*, by the late Dr. D. T. JONES, President of the New York State Medical Society, for 1861, we copy these extracts, concerning a class of whom he, himself, was a shining exemplar—a class, illy paid, over-worked and under-rated—the *Country Practitioner*:—

A French philosopher is reported to have said that, at the end of a century, the newspaper will be the only book possible. So far as medical literature is concerned, we are nearing that point very rapidly. Already do periodicals furnish the busy practitioner with the larger share of his professional reading; in them he finds a living panorama of the daily improvements in his chosen profession. Necessity, in the country, prompts to this. Your city physician is always near to help in any extremity—the best council, the best books, and time to search them. Does it ever occur to the inhabitants of our small towns and villages, of the extra importance to them of their family physician? Do they understand that, in more senses than one, he holds their thread of fate? You or some of your family, may be suddenly struck down, past all hope, but by a surgeon's skill. Then how important that he be equal to the emergency. He goes alone, unaided. Anxiously have they awaited his arrival. How searching the glance, that seems to look into the inmost soul, as they ask, "Doctor, can you save me?" How the blood rushes back to their pallid cheeks at his assuring answer, "I can."

My hearers of the laity, if any are present, should a young man come into your neighborhood to practice his profession of medicine and surgery, examine him well, weigh his claim

to your confidence, especially as to education, sobriety, morality, and good common sense. If you find such an one among you, cherish and encourage him, remembering that every moment spent in his studies is for your advantage; the idea he gets to-day, may save to you a darling life, or prevent issuing, in your own case, the sentence, "this night thou shalt surely die."

It will cost you but little. His aspirations for this world's goods are limited, or he is destined to be disappointed. He will have little need to use the prayer of Agur, "Give me neither poverty nor riches," for country fees give a bare support, nothing more.

* * * They who write of the "currents and counter-currents of medicine" would seem to know but little of country practice, or country practitioners.

The man who is his own apothecary, who measures, weighs, compounds, and doses his own medicine, will seldom be found giving too much or too many kinds. His *materia medica* will be very simple, but very certain. His weapons are not shot guns, loaded and fired under his direction, but Minie rifles, aimed by no eye except his own. No ignorant or dishonest apothecary comes between him and his patient.

AMERICAN JOURNAL OF OPHTHALMOLOGY.—Dr. Julius Homberger has issued a prospectus of a new journal with the above-title, to be published in New York, bi-monthly, at \$2 per annum. It is stated in the prospectus that Dr. H. was a pupil of De Graefe, was late assistant to Dr. Sichel, Paris, and is a member of the Société Universelle d'Ophthalmologie, etc. We wish him success in his new enterprise. L. W. Schmidt, 534 Broadway, above Spring Street, is to be the publisher.

TEMPERATURE AND VENTILATION.—The Paris *Siecle* says that, generally speaking, during winter, apartments are too much heated. The temperature in them ought not to exceed fifteen degrees centigrade, (fifty-nine degrees Fahrenheit,) and even in periods of great cold, scientific men declare that twelve or fourteen degrees had better not be exceeded. In the wards of hospitals, and in the chambers of the sick, care is taken not to have greater heat than fifteen degrees. Clerks in offices, and other persons of sedentary habits, when the rooms in which they sit are too much heated, are liable to cerebral congestion and pulmonary complaints. In bedrooms,

and particularly those of children, the temperature ought to be maintained rather low; it is even prudent only rarely to make fires in them, especially during the night. In addition to keeping up only a moderate temperature, the windows of all rooms, whatever the weather, ought to be opened for a time every day, so as to renew the air.

FOOD IN TYPHOID FEVER.—Dr. Hérald confirms the opinion expressed some time ago on this continent as well as in England, that in the management of typhoid fever the all-important, the capital question is that of food; prolonged abstinence leads to the most disastrous results. One lady patient was sinking steadily under a strictly enforced abstinence; when the pulse numbered 120, nocturnal agitation with wandering delirium, vomiting and diarrhoea had set in, the effects of nutriment were tried. At first, only a few drops of iced beef-tea could be swallowed with the utmost difficulty; by and by the food remained on the stomach, and in proportion to its increase, the pulse fell, the delirium yielded and the patient recovered. Mr. Marotte has established that vomiting, diarrhoea and delirium, more especially the latter, are characteristic of starvation. Trousseau also lately pointed out the striking analogy existing between the more serious symptoms of typhoid fever and those of autophagy consequent upon protracted abstinence—*Berkshire Med. Journ.*, from *Champonnière's Journal*.

SUFFERINGS OF THE WOUNDED AT FORT DONELSON.—The physical suffering of all who were engaged in the attack on and capture of Fort Donelson probably exceeded that of any previous battle on the continent. The temperature was lower than on the occasion of the famous winter fight at Eylau, and the misery of the men, from wet and frozen clothing, and insufficient food, was perhaps as great. On Thursday, the first day of the fight, the temperature was but ten degrees Fahrenheit, and snow fell during the day and the succeeding night. Feet and hands were, in many instances, frozen. It is believed that many of the wounded died where they fell from freezing, as the armies were so near together that neither belligerent could venture out to relieve the wounded or remove the dead. It is said that some of the wounded laid in the field from Friday until late on Sunday, and when rescued, were stiff with cold and covered with snow.

THE CHICAGO MEDICAL EXAMINER

N. S. DAVIS, M. D., Editor,---FRANK W. REILLY, M. D., Ass't Editor.

VOL. IV.]

APRIL, 1862.

[NO. IV

Original Contributions.

ARTICLE IX.

OVARIAN TUMORS.

By WM. H. BYFORD, A. M., M. D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, IN THE MEDICAL DEPARTMENT,
LIND UNIVERSITY, CHICAGO, ILLINOIS.

(Continued from March Number.)

The manner of applying the pressure is of the greatest importance; the apparatus should be permanent, and exert as much force as the patient can bear without too great pain, fever, derangement of the abdominal viscera, or other indications of too acute a degree of inflammation in the cyst or damage to some organ. It should be applied to the tumor as nearly as possible, and the forcible pressure should be exerted alone upon the collapsed mass, so as to crowd it back against the sacrum, lumbar muscles, spine and other hard parts of the posterior wall of the abdomen. In order to do this properly, after the fluid is evacuated as completely as possible, we should examine the abdomen minutely so as to ascertain, as clearly as possible, the position of the collapsed cyst. This will usually be a little more to one side than the other, and may, generally, easily define its shape, and get a good idea of its size. We should now construct a compact compress, corresponding in shape and size with the shape and size of the evacuated sac, the compress should be embraced by solid wood or tin outside. The compress can be made of hair, gum

elastic material or napkins. If of the latter, they should be well stitched together, so that there can be no shifting in their position. After attaching the soft portion of the compress to the hard firmly, so that any pressure upon the latter may be exerted unvaryingly upon the former; it may be placed immediately over the tapped tumor, and pressure applied from a direction to press it against the hardest part, bearing on the posterior walls of the abdomen or pelvis. An attentive examination of the tumor under the pressure of the instrument will inform us pretty accurately as to the efficiency, completeness and direction of the pressure of the compress. The compress may be managed better by a belt of soft, but firm leather, to surround the body in such a place as to press over the centre of the compress. The power and direction of the pressure may be regulated thoroughly and at will, by subjecting it to a tourniquet screw pressure from the belt. Of course, there must be thigh and shoulder straps to the belt, in order to keep it from slipping up or down. When we have adapted these simple contrivances, we should turn the screw to such a degree as to press strongly as the patient can bear, and with it thereafter regulate the pressure as we may judge best. Having thoroughly satisfied ourselves of the appropriate adaptation of the apparatus, we should wrap the whole abdomen agreeably tight, from pubis to sternum, with a flannel roller. We should every day remove the flannel roller, and examine the compress and belt, to be sure that they are not disarranged, and if in the least so, we should re-adapt them. We may tighten the screw or loosen it each time, or allow it to remain untouched, as the case may be. The greatest care should be taken not to produce too great pressure with this compress. It should be loosened when chilliness, febrile excitement, or other general signs of distress are added to local pain; it may be tightened soon as the symptoms decline.

This mode of applying pressure, I think, is much more efficient and manageable than the plan recommended by Mr. J. B. Brown, the accomplished surgeon of female diseases and injuries, of London. His plan is to make a graduated

compress of napkins, so as to fit the top of the pelvis, and after applying it over the tumor so as to press down into the pelvic cavity, and against its back part place over the whole a broad bandage tightly fastened, from pubes to sternum. With this appliance, we cannot always be accurate in the extent, position and rate of the pressure, and, consequently, much more skill and experience are necessary in its application. Its success hence is much more frequent in Mr. BROWN's hands, than it has been with the profession generally. I am not aware that Mr. BROWN teaches the necessity of pressure to all the collapsed tumor, but understand him to make most of his pressure at the origin of the tumor—the ovarian region. The tumor when collapsed by tapping, after great distention, seldom sinks anything more than partially into the pelvis; the long exercised traction upwards generally lifts the ovary of that side above the pelvis, and thus we may generally somewhat accurately fit our means to its slope and position. An objection Mr. BROWN thinks sometimes applied to pressure, is the presence and great aggravation of prolapsus uteri. This objection it will be apparent, is very much more applicable to his mode of causing it, than the one I recommend. Multilocular tumors may be cured in this, perhaps more frequently, than any other way besides extirpation; for the pressure may be made to bear upon, and greatly influence the development of the small cysts that are not evacuated by pressure. I have more than once evacuated several sacs through one opening in the abdominal walls, by partially withdrawing the trochar, and directing the point toward a full sac, after the one first pierced had been evacuated. This should be attempted in a multilocular tumor before we use pressure; and it is allowable, I think, to introduce the trochar in several places where there are a number of cysts that cannot be reached by the instrument from one point. I would not be understood as advising a reckless use of the trochar in these many-cysted ovarian tumors; but after we have decided from the circumstances of a careful examination of a given case that tapping and pressure is the treatment, we risk nothing, I think, in

being thorough in our efforts to evacuate as nearly as possible, all the sacs. The bad effects arising from tapping and pressure, are inflammation and its consequences. When there are symptoms of severe acute inflammation, the pressure should be removed, and leeches, cathartics, etc., should be employed to moderate or remove it. If the inflammation is in the sac, we should wait until all the acute symptoms subside, before the pad or compress is placed again; if, however, we can satisfy ourselves that the inflammation is in some other part distressed by the pressure, by varying the direction of the pressure, provided, we can include the tumor under it, we need not wait until all the acute symptoms have vanished. I have a better opinion of this kind of treatment when carefully managed and watched, than any other, except the complete extirpation of the ovary. Another plan of obliterating the sac of ovarian tumor is to first evacuate, and then inject it with some substance calculated to induce inflammation in it, which, by its adhesive or destructive processes, may completely effect this object. A large number of cases are reported cured by this plan of treatment. For obvious reasons, it is almost exclusively confined in its usefulness to the unilocular variety. Under certain circumstances only, can we expect to reach more than one cyst at a time with the trochar and injections. When a cyst is simple, the patient in good health, and we succeed in properly managing the operation, there is not a great deal of danger in it, and we may reasonably hope for benefit from it. The most simple, and I think, effective mode of operating, is to first draw off nearly all the fluid, except say, one or two pounds, as well as we can judge of it, with a large trochar. After this is accomplished, we should pass an elastic catheter, or other flexible tube, through the canula of the trochar to the bottom of the cavity. With a hard rubber syringe, we may inject the medicine, whatever that may be, through the catheter into the interior of the cyst. By using this elastic tube, there is no danger of failing to carry the material to the part we desire to reach, without its coming in contact with anything else, or being decomposed before it

arrives at its destination. The formula for this kind of injections are numerous, and several different substances used. Iodine seems now to be the substance generally employed. Dr. SIMPSON recommends several ounces of the tincture. Six ounces is probably enough to use at one time. I have used on several occasions six ounces of a mixture containing one scruple of iodine, two scruples of iod. potass to the ounce of water. This is certainly iodine enough, if specific in its influence to cure any tumor. My plan is to allow it to remain in the sac, instead of removing any of it.

Iodism is likely to occur to a slight extent, but to be the source of no considerable inconvenience. If it should be thought best to remove a part, or the whole of the iodine, the better way to do it is to pump it out through the tube, by means of which it was introduced, instead of squeezing it back through the canula of the trochar. This plan of extracting it, precludes the possibility of allowing any contact with the peritoncum; which in the event of disarrangement of the canula, might otherwise take place. Although ordinarily, no great amount of acute inflammation takes place as the effect of this injection, yet we should remember that it sometimes does proceed to a dangerous extent, and be upon our guard with the means necessary to prevent a fatal degree. In fact, it would be negligence on our part not to watch with solicitude all the most trifling operations upon an ovarian cyst. It may be asked whether iodine is the best substance to use as an injection in such cases? Although I have to some extent fallen in with the fashion of using iodine, I cannot resist the conviction that there are substances that would do as well, against which, some objections that apply to iodine could not be urged. Iodine operates promptly upon the organism when introduced in this way, by being absorbed and taken into the circulation; yet I think, there can be but few who desire any thing more than its local effect upon the inner surface of the sac. Alcohol, wine, brandy, in fact any local stimulant whose general effect after absorption is more transient, as well as less powerful, would perhaps answer just as well. It cannot

be that the internal effect of iodine upon the kidneys and other organs of excretion can enter largely into its good effects, for if such were the case, it would be better given by the stomach. Injection of iodine was regarded several years ago as the most eligible mode of treating this affection, because of its comparative safety and frequent success; but there can be no doubt that it was overrated, and now the profession is less ready to trust it. I believe it to be both more dangerous and less efficient than pressure after tapping. This is not in accordance with the opinion of Dr. SIMPSON I believe. I have lately known of a case having been treated with iodine injections combined with pressure. I speak of this case to warn against similar proceeding, for it is plain, upon a little reflection, that if the pressure is properly applied, it will so lessen the cavity of the cyst as to endanger the effusion of the iodine, through the puncture in the sac, into the peritoneal cavity, and thus induce a fatal peritonitis. And if pressure is to be used, we should wait for two or three days after the injection.

The last and doubtless most effectual plan for obliterating the sac, is the establishment of a fistulous opening, communicating with the peritoneal cavity, or the external surface directly or indirectly, through the vagina or rectum. This plan is also the most dangerous plan, resulting in a large number fatally. Quite a difference in the effects, both remedial and morbid may be remarked in the different places for the fistulous opening. When properly and carefully managed, the opening in the peritoneal cavity is productive of least harm, and less likely to be followed by a cure. The opening in the vagina is more effective, and the direct opening through the abdominal walls both more efficacious and more hazardous, than any of the others. When a communication is perfected and perpetuated between the cavities of the tumor and the peritoneum, the surface of the latter being a better absorbing surface, the contents are absorbed, thrown into the circulation, and eliminated by excretion through the kidneys and alimentary canal. This process being carried on more rapidly than the secretion by the tumor, the latter is allowed to contract more and more,

until its secreting surface is wholly lost, and indurated tissue is all that is left behind to mark its former existence. Some very important precautions are necessary to such happy results as will appear by an attentive consideration of the subject. It is found for instance, that sometimes the contents of the tumor are poison to the peritoneal lining of the abdomen, and therefore fatal inflammation may result from its effusion into the cavity. We cannot say without an inspection of the fluid, whether this is likely to occur upon performance of an operation or not, and I fear that we can by that means arrive at only a presumption upon the subject. In evacuating for the first time, these growths we find, occasionally, clear, transparent, good, innocent looking fluid, begin to flow, when as the flow continues, the latter part looks darker, grumous, and ill-conditioned; now, whether we might not be deceived upon inspection is a matter of question, and really furnish a virus to the surface of the peritoneum, instead of the bland albumen of the healthy ovarian tumors. However this may be, we do know from cases placed on record, by Dr. SIMPSON particularly, and observed, not unfrequently, that these tumors do sometimes burst into the abdominal cavity, and disappear, without any bad symptoms, so that we are justifiable in hoping the artificial opening may result well. Dr. SIMPSON recommends (and it is certainly the most sure way, although, as I have remarked, we must under all circumstances, be in doubt,) prior to opening communication with the peritoneal cavity, that we tap the tumor, and remove some of the fluid for examination, and if it is the ordinary bland, mucilagenous, transparent substance found generally after first tapping, he assures us we may proceed to the operation unhesitatingly, or rather may keep the puncture in the sac open afterwards, instead of allowing it to close up, as it usually does. This is done by, in the first place, not removing nearly all the fluid from the sac by tapping, but allowing enough to remain to keep it partially distended; and in the second place, every twenty-four hours so to press upon the tumor, as to well up the fluid through the opening in the sac, and thus break the

slight adhesions which may have formed between the edges of the wound, and allow it to escape into the peritoneum. Dr. SIMPSON thinks this is the safer way, so far as the dangers from the operation is concerned, but as will be seen, not so certain of accomplishing the object. He has cured cases in this way. The most effectual and the most dangerous way is, to cut down upon the tumor, and remove a piece from its wall large enough to insure patency, withdraw a part of the fluid, and then close the wound in the abdomen, and allow the rest of the fluid to flow into the peritoneal cavity, thence to be absorbed. The immediate danger in this operation is, that of dividing some of the blood-vessels, which ramify through the walls of the tumor, and thus allow internal hemorrhage to take place. To avoid this, it is recommended by Mr. BROWN to draw out, examine, and divide, only that portion which is clear of vascular ramifications. Others have recommended to tie any branch large enough to bleed. There is but little doubt that the precaution recommended by Mr. BROWN would be sufficient to avoid that difficulty. The large wound through the peritoneum makes the chance of inflammation in that membrane greater than the mere puncture of the trochar. Upon the whole, I think I should prefer Dr. SIMPSON's plan of keeping the opening made by the trochar in the tumor patent, by frequent well directed manipulation. It ought to be practiced I think oftener than every twenty-four hours; as often as every twelve, for the first two days. It will probably be found upon extensive trial, that it may not be always practicable. Should there be adhesion at the point where the trochar passes, it would necessarily fail.

The plan of making a fistulous opening externally, is more practicable perhaps than the one just detailed, from the consideration that it is more manageable.

The operation is simple, and not attended with much immediate danger; the danger coming in the shape of acute inflammation soon after the operation, or exhausting suppurative inflammation, and its attendants. Mr. BROWN, who has given it a more extensive trial than anybody else, selects a point

midway between the umbilicus and the anterior superior spines of the ilium of the side in which tumor originated. His plan is to make an angular incision at this point down to the peritoneum, dissect up the angle from that membrane so as to completely expose it, evacuate the tumor through this exposed part with a trochar, stitch the sac to the sides of the opening, enlarge the puncture in the cyst, and keep it open by a pledget of lint or other substance as he finds most convenient. Others cut down to the peritoneum, at a point midway between the umbilicus and symphysis pubis, stitch the sac to the sides of the wound, and keep open by lint or stomach tube. Care should be taken, especially if the contents of the sac should have a suspicious appearance, to prevent it escaping into the peritoneal cavity. Often there is adhesion at this part when the stitches will not be necessary. This opening should be kept patent until the cavity of the cyst is lost by contraction, inflammatory adhesion, or granulation, or all these combined, which is probably the common mode of their disappearance. Some difficulty will be found in doing this; there is such a strong tendency in the wound to contract and heal up by granulation. If necessary, we may from time to time, somewhat enlarge it with the knife, and we should not allow it to close until the discharge has entirely ceased. From what I can see of the dangers of this operation, they are very little, if any, less than from ovariectomy; and I should not feel induced to resort to it, unless it were in a simple cyst, where tapping, injection of iodine, or the use of pressure had entirely failed, or where after exposing the cyst ovariectomy, was found impracticable, from extensive adhesions. This, I have done in one instance. The adhesions were so extensive, that the cyst could not be removed; in fact, they seemed to be about universal, the incision was small, only admitting two fingers, the sac had adhered at the point, where the opening was made, so the incision was all that was necessary in the way of an operation. The patient died of acute peritoneal inflammation in three days afterwards. A post mortem examination revealed extensive inflammation of the sac and peritoneum. I am

inclined to try a modification of this operation if an opportunity offers in a patient who is not willing to submit to more severe operative procedure, and that is to perforate the tumor with a trochar half an inch or more in diameter, and through the canula, introduce a stomach tube, and leave it there, withdrawing the canula over it. The tube may be left until peritoneal inflammation glues the sac to the abdominal walls, if adhesion does not already exist. After this, the tube can be withdrawn, and re-introduced after cleaning, or, if it will not "go," one somewhat smaller used in its place.

Professors KIEVISH and SCANZONI, of Wurtzberg, are warm advocates of a fistulous opening through the vagina into the tumor, and keeping it open until the same obliteration takes place that was spoken of, as occurring in the case of opening through the front walls of the abdomen. SCANZONI operated on fourteen cases; eight resulted in a perfect cure; in two, the fluid collected again in a few weeks, one died of typhus fever two months after, and three were lost sight of. In none of the fourteen did death occur as a consequence of the proceeding. He mentions one case only, in his whole experience, in which death occurred from peritonitis, and that was Prof. KIEVISH's case. SCANZONI admits its danger, but shows quite a favorable opinion of it. Dr. WEST gives three cases of his own, two of which were cured, but had formidable inflammation; the third died, not as an effect of the operation, but from something else, which he does not state. SCANZONI taps with a trochar through the vagina, and allows the canula to remain until the cure is effected. This, of course, occupies a variable time; the tube was withdrawn by SCANZONI by the eighth or tenth day in some cases. He says that some of his cases recovered without any sign of inflammation, or other inconvenience. Dr. WEST operates by introducing the trochar, and withdrawing the fluid, passing a number twelve catheter through, and removing the canula over the catheter. The catheter is allowed to remain until the curé is complete. Simple cysts are the only kind that can be cured by the fistula method, and the recommendation to tap once, to be

sure that there is but one cyst, is a good recommendation. The cyst cannot always be reached from the vagina, and only in such cases as it is crowded down into the pelvis, so as to give obvious fluctuation in that canal, should we think of this operation.

The third object in the treatment, partial or complete removal of the diseased mass remains to be considered. Could the tumor always be removed when the operation is once commenced, one of the greatest objections to ovariectomy would be removed, and the question of the propriety of attempting it, would be very much simplified; but unfortunately the operation cannot only, not be finished in many instances when attempted, but it is utterly impossible in our present state of knowledge, to predict with the most favorable opportunities whether difficulty will arise or not. The only obstacle worth considering, if not the only one, to completion of the operation of ovariectomy, is the adhesion of the tumor to the abdominal walls or viscera so strongly and largely, that it is impossible to separate them, and if separated, to add very much to the dangers of inflammation. This obstacle and its dangers are so great, as to entirely deter many courageous surgeons from performing ovariectomy, or allowing it to be considered a legitimate operation; but notwithstanding the above facts when confined to appropriate cases, with appropriate tentative measures, care, and the avoidance as far as possible, of the objectionable features of the operation itself, in the modes of performance more particularly, and the desistence from or change in the operative procedure when much adhesion exists, I should unhesitatingly advise a resort to it.

I cannot help believing, or refrain from expressing the opinion, that very few operations of ovariectomy are performed in which there is not culpable neglect of the avoidance of some of the serious causes of disastrous consequences.

I shall be understood better when I bring together in one view some of the effects which generally intervene between the surgical violence of the operation, and fatal termination. They are 1st, peritoneal inflammation, 2d, hemorrhage from

the peduncle, 3d, pyæmia, 4th, abdominal shock, 5th, exhaustion.

The danger from the above conditions is somewhat, in comparison with the order in which they are named, the most danger is to be expected from peritoneal inflammation, next from hemorrhage, etc. Now an operation ought never to be performed when possible to do otherwise in such a manner as to *increase* the risks of any one of the above conditions. Everything should be avoided, so far as at all practicable, that irritates the peritoneum in any shape, perfect security from hemorrhage should be an indispensable consideration. It is not supposable that with every possible improvement, the operation will ever become safe, but there is every rational position in favor of the assumption, that many deaths may be avoided by thus rigidly adhering to a determination to leave nothing undone to lessen all the above mentioned causes of death. Success in a great undertaking, notwithstanding bad management, should not encourage us to hope for a like purely fortunate result. The more good sense and science we can combine in an operation, the more likely we will succeed. Many good men do things they know hazardous, *when they could as well avoid them*, because they have been successful in the same way before. Dr. TYLER SMITH read four cases of ovariectomy before the London Obstetrical Society, which are published in the *Lancet* for September, 1861, in one of which he says, "the ligatures and stump were cut off as closely as possible, and the whole returned into the pelvis, with the expectation that they would be quickly enveloped in coagulable lymph, *so as to prevent injury*. The patient recovered without a single bad symptom, taking no medicine but thirty drops of laudanum. This woman recovered well, and will justify similar procedure when unavoidable, but the treatment was bad and cannot be justified; because Dr. SMITH could, and ought to have avoided the risk, which rendered the development of coagulable lymph to prevent danger from the unnecessary presence of his irritating ligatures. Mr. SPENCER WELLS very justly reprimanded him for it in a

gentlemanly way, by saying that the procedure ought not to be imitated without more discussion. Before undertaking to avoid or prevent any of these untoward circumstances which result from ovariectomy, it will be necessary to examine more at length the immediate causes of them. And first of peritoneal inflammation. One of these causes, to a great extent, unavoidable, is exposure of the peritoneal cavity to the contact of air, and, in many instances, unnecessary handling or contact with the fingers, sponges, cloths, etc. The greater in amount, the longer duration either of these sources of irritation are applied, the more danger, notwithstanding immunity observed in cases where both were extreme. If contact of the atmosphere is slight, and its duration short, we must have less danger to apprehend than if the whole abdominal cavity were exposed for a long time, and it cannot be a philosophical conclusion, that a small wound two inches long, exposing but a small extent of the peritoneum, open but ten minutes, is as dangerous as an incision from sternum to pubis open for an hour. Much less is it rational to handle all the viscera, wipe them, and return them into the abdomen, and perhaps sponge out the whole cavity. That women have recovered from such rash acts, is no reason why they are proper, or allowable, when it is possible to avoid them. While this kind of causes of peritoneal inflammation cannot be wholly avoided, all that is possible, should be. The incision should be no larger than necessary, to permit the extraction of the collapsed tumor, and the hand should never touch the peritoneum when adhesions do not make an enlargement of the incision necessary, and the introduction of the fingers indispensable, then the enlargement of the opening should be carried to the least possible degree, and the handling as slight as necessary to accomplish the object, either to separate the adhesions or satisfy us that this is impracticable. Perhaps the return of the ligature into the abdomen is fraught with more danger than any other of the ordinary parts of the operation. Its contact with the peritoneum will irritate it, and awaken inflammation, unless in very fortunate cases, it is surrounded with fibrine, and

thus the danger averted. It should be remembered, however, always, that it is a *danger averted*, and that the limit of the inflammation is the aversion of the danger, and that the presence of the ligature is the danger. But suppose the ligature not left in the peritoneal cavity, and consequently needs not to be surrounded by fibrine, but that it is left outside the abdomen at the wound, still its presence is a source of danger, from the strangulation it causes. Inflammation must take place to slough the ligature off, and is very likely to spread along the membrane into the abdomen, and become general when once it has a starting point. This last danger from peritoneal inflammation, from the use of the ligature, is as imminent when the clamp is the agent of compression or strangulation; and I think, when it is possible to do without either, we should do so. The inclusion of the ligature, although it may not light up extensive and rapidly fatal peritonitis, as a focus of phlegmonous inflammation it may generate pus enough to poison the blood, and induce pyæmic fever and exhaustion. It is most likely that pyæmia results more frequently in this, than any other way. But the inclusion of the ligature is the cause of the next most frequent condition effecting death, after ovariectomy, that is hemorrhage. However secure the ligature may be applied, apparently, there is no certainty that bleeding will not occur from the peduncle.

Dr. WEST introduces a table, which perhaps shows the subject in its proper proportion. In fifty-nine cases,

29	proved fatal from	peritonitis.
13	“ “ “	hemorrhage.
8	“ “ “	exhaustion.
2	“ “ “	shock.
3	“ “ “	abscess.
2	“ “ “	ulceration of intestines.
1	“ “ “	tetanus.
1	“ “ “	phlebitis.

It will be seen that a large proportion of the deaths occur as the consequence of exhausting hemorrhage in the peritoneal

sac, the patient bleeds to death internally. But if the hemorrhage should not be great enough to exhaust and cause death, as a hemorrhage, as an irritating substance, it may produce peritoneal inflammation, and in that way cause death. Ulceration of the intestines, in consequence of the ligature lying in contact with them, is another evil, resulting from the presence of the ligature in the abdominal cavity. The principle objections to the ligature, and which should warn us against its use, either internally or externally are, that it causes peritoneal inflammation by lying in contact with it in the cavity; by inducing strangulation when either internal or external, and sending forth the inflammation along this very susceptible membrane, thus causing it to become general; by inducing phlegmonous inflammation, exhausting abscess, and perhaps, also causing pyæmia, and lastly, the great uncertainty in securing the vessels of the stump against hemorrhage. I regard the dangers here mentioned against the ligature as adding so much hazard to the operation, that I could not think of making use of it in any shape, unless it seemed entirely indispensable in the particular case. If I should find this to be the case, I should be inclined to imitate the example of Dr. TYLER SMITH, by cutting it off close to the stump, and returning the whole, instead of leaving the end of it out of the wound, both to add to the extent of membrane touched by it, and consequently the amount of irritation; and to serve as a medium to admit a constant supply of air in the peritoneal cavity, and thus very materially promote suppuration and putrid decomposition of any retained effusions. More can be done fortunately, to prevent peritoneal inflammation and internal hemorrhage than any other conditions which are found to prove fatal by their presence. The shock which succeeds the operation, now that chloroform can be made to shield the nervous system against the effects of such extensive violence, is not so much to be feared, but should always be carefully guarded against. If inflammation and hemorrhage can be prevented by improvements in the operation, even in fifty per cent. of the cases, fatality will be very materially

decreased. Whatever may be the teaching of experience as to the tolerance of, and recuperation from violent and rash procedure in the performance of so dangerous an operation, it cannot justify us, in making use of means or methods that common sense, physiology, and pathology, all combine in declaring more hazardous than other means and methods, which we can employ. Let therefore no more incision and exposure, or handling of the viscera be allowed than is absolutely necessary to extract the collapsed tumor; and discard scrupulously the ligature and clamp. After so much of an introduction by way of expressing my conviction that too much preventive measures cannot be employed, and that the operation is too often more hazardous than it need be, by following the examples of men who have succeeded in spite of rashness and carelessness, I am ready to describe what I consider the best method of operating. The best time for operating, is about the middle of the menstrual month of our patient, and if consistent with the circumstances of the case between the first of October and the first of June in this climate, but of course, all will depend upon the urgency of the symptoms in the case, as to this last item of time. The patient should not be too much prepared, as it is easy to get up functional disturbance, and thus with medicines intended to place the patient in more favorable condition for operation, get the system in a state the least calculated to resist the attack of traumatic disease. Above all, we ought not to disturb the abdominal organs with a cathartic, and if the stomach, liver, or other organs require a purgative, it should be given three or four days before the time to operate, and we should give them time to recover their tranquil tenor of function, before we venture upon it. Should the bowels be constipated, we may give an enema six or eight hours before hand, but not oil, or other cathartics. It is good practice to give a pretty full dose of opium an hour before we put the patient upon the table. This is all the preparation she needs, provided she is in good condition of general health. Of this last, we should be sure, when

practicable. We should at least satisfy ourselves that there is no predisposition to the suppurative, erysipelatous, or inflammatory diathesis. For three hours, she should be in a state of perfect physical and mental tranquility, if possible to secure it, and at the time, placed in a perfect anæsthetic condition before being removed from her bed, and without seeing any of our preparations. We should be prepared, by carefully passing in review the successive steps of the operation minutely and deliberately, performing the operation mentally first, making provision for all possible complications or embarrassments, and carefully placing everything we shall need, as suggested by this kind of reflection, just where it can be most handily available. We should next state to our assistants what we expect to do, in each successive step in the operation, and the part we desire them severally to perform, under all given circumstances and times of the operation. This complete understanding between all the parties who partake with us in the operation, will preclude the danger of confusion and possible imperfection in the procedure. We want a good scalpel, blunt-pointed bistury, large trochar, two large ligatures in needles, an ecrasseur, half a dozen silver pins three inches long, with moveable steel points to them, several large waxed ligatures, three or four small needles, armed with silver wire, a tenaculum, silk for artery ligatures, and well to have small artery forceps. This will constitute a pretty full operative armament. We shall also want two or three fine sponges of different sizes, a flannel roller large enough to make a binder for the patient, one pan of cold and warm water each, some adhesive plaster, and old cloths of linen for compresses. Our table should be firm, about two feet wide, six feet long, and conveniently high, covered with sufficient soft quilts not to be too hard, and placed near the lightest part of a large and airy room, brought to the temperature of about 70 Fahrenheit. When all the above preparations are made, we are ready to operate. We should have at least three intelligent physicians as assistants. One to act as main assistant, one to use the chloroform, and one as a general handy man.

Supposing our diagnosis to be as complete in all respects as possible, especially with reference to the nature of the contents of the tumor and the adhesions, etc., we may cause the bladder to be evacuated, etherize and place our patient on the table, on her back, with the limbs hanging over one end to the knee. We should stand at the end of the table in front of the patient, when the large protuberant abdomen will rise before us, and the part below the umbilicus completely exposed. With the scalpel, the operator should make an incision in the linea alba, midway between the umbilicus and symphysis pubis, about two inches long, through the walls of the abdomen, down to the tumor, but he should avoid opening the cyst with the knife. It will require some care to avoid the cyst, particularly as the aponeurosis is thin at this place; the strokes should be light, and an examination for the peritoneum after each touch of the knife, soon as near the proper depth has been reached. When the sac is exposed, we should plunge the trochar into it and evacuate it, and so far as possible, extract it through the wound. If the tumor is multilocular, this procedure will soon bring another cyst to the incision, when it should be punctured and evacuated, and thrown out through the wound, the next punctured, etc., until the whole is reduced sufficiently in size to be drawn entirely out. Should there be a solid portion at the base of the tumor so large as not to come out of the wound easily, we may enlarge the latter sufficiently. All this being done, the tumor lying outside the abdomen; the pedicle passing through the opening should be pierced on each side with one of the needles, with the large ligature, as near as possible to the tumor. This is for the purpose of giving us perfect command of the stump, after the tumor is separated. The chain of the ecrasseur should now be thrown around the peduncle, at the base of the tumor, leaving the stump long as possible, and slowly crushed through it. We should next place the stump in the wound, leaving its edge a little above the level of the skin, and by means of the silver pins one inch apart, surround them with the thread, and secure perfect adaptation of the lips of the

wound. The pins should be made to enter the skin about an inch from the edge of the incision on one side, dip down as near to the peritoncum without touching it as we can well effect, and piercing the opposite lip, come out about an inch beyond the other side of the wound. If the edges gape at all, some superficial stitches with the fine silver wire should close this more completely. A compress of wet linen should be placed over the wound, and all surrounded by the flannel roller, the patient removed and placed in bed, and allowed to come from under the effect of the chloroform. This operation is simple, easily performed, and I think inflicts as little dangerous violence, if not less than any other operation, the details of which are given. The extent of the wound is the least possible for the purposes of it; no handling or even rough contact of the viscera is required; the peritoneal cavity is exposed in the smallest extent, and for the shortest time; and all the objections and dangers urged against the ligature around the stump or in the abdominal cavity, are obviated and avoided. The separation of the peduncle with the *ecrasseur*, and the placing the edge outside the wound, so that if hemorrhage does occur, it is outside, and is within the control, as well as observation of the medical attendant, lessen, it seems to me, very materially the *causes* of inflammation at least; and as a logical, if not actual sequence, the dangers of the operation.

Very many cases, however, which promise to be favorable for the above procedure, so far as as we can judge from examination before hand, as we proceed in the operation we will find cannot be terminated without much more difficulty, and in some, our procedure must be very materially varied from the above detailed plan.

The main, and almost only obstacle to the performance of this operation is adhesion of the tumor to the abdominal walls or viscera: the amount and firmness of adhesion will determine the extent and nature of the varying steps. The incision through the abdominal wall should be the same in all cases, and unless adhesion be at the point where the incision is made,

I would evacuate the presenting cyst, and remove it through the opening as far as practicable, and if the adhesions were small and easily overcome, do so by traction; or if to the intestines or omentum they might be separated, after bringing them under the eye through the wound, and we should thus proceed to evacuate separate cysts as far as practicable. Should this plan prove ineffectual, after persevering trial, the opening should be enlarged to four or five inches in extent, and then a careful and thorough inspection of the condition of adhesions be made, and if they are extensive and numerous, the idea of complete extirpation should be abandoned; but so much of the cyst or cysts should be evacuated and withdrawn through the wound as possible, without great violence. If it should be practicable to withdraw a considerable portion, or even if not, we should lay open that part at, or outside, the incision, and turn the sides over each edge of the wound, and through the incision in the cysts try, and if possible, evacuate the fluid from all the remaining cysts, and in this way as perfectly collapse the tumor as possible. If practicable, we ought not only to puncture the cysts that we cannot remove in this way, but remove a part of the partition between those remaining, so as to convert them all into one cavity. We should now separate all the tumor outside with the ecrasseur, first securing it, so that the portions remaining do not pass beyond our reach into the abdominal cavity. Bringing the edges of the amputated sac above the surface, it should be then secured by the pins as in the first proceeding, and the wound should be closed up, except to the extent of half an inch at the lower angle, which should be kept open by lint, or the insertion of a flexible tube. I should not feel inclined to use a great deal of violence in the separation of the adhesions, nor to ligate large surfaces, and leaving the ligatures in contact with the peritoneum. If none of the sacs can be removed, after puncturing and destroying, as far as possible, the partitions, we should keep the wound open as above directed. The after treatment should have reference to the danger from the shock, from which the system may not recover

itself; peritoneal inflammation is by far the most dangerous; and where a part, or the whole of the tumor is left, inflammation of the cysts or hemorrhage from the amputated stump.

Opium liberally used, is the best means of guarding against the shock, and occurrence of inflammation. The patient should be kept fully under its influence for the first forty-eight hours, and then it should be slowly and gradually decreased in doses, so that its influence may be prolonged for two days more. Generally when the first four days are fully passed without symptoms of acute inflammation, the danger from that cause will have pretty nearly passed, and we should let the patient slowly come from under the influence of the opium. I need not argue or bring examples in proof of the efficacy of opium in preventing inflammation after operations; most surgeons rely upon it with a good deal of assurance. Some difference as to the quantity in different persons, to produce the same effect, will make it necessary to watch the effect of the first dose, before we can determine how much may be given at stated intervals. For the purpose of doing this, as well as obviating any other difficulty or danger that may present itself, we should remain with her, or leave some competent physician by her bedside for the first two days. Two-grain doses may be given every four hours—and I think solid opium best—and if this does not make a decided narcotic impression, the quantity should be increased. Mr. BROWN recommends small pieces of ice in the mouth to suck, as one of the means preventive of inflammation, and as they are very grateful, particularly the second day, I would join him in it. The bladder must be watched, and evacuated at least every eight hours. If the patient can do this spontaneously, it is well, if not, the catheter ought to be resorted to. Every two or three hours the dressing in the region of the wound should be inspected, lest a slow, but exhausting hemorrhage occur, and the chances of our patient be lessened. Although the *ecras-seur* generally suffices to prevent hemorrhage from the stump, it is not always so, as I have verified in one instance, at least. Should nothing threatening take place at the expiration of the

third day, opium may be withdrawn slowly, by gradually lessening the dose, or lengthening the intervals for its administration, and from this time forward allow the patient to return to her ordinary regimen gradually. The diet for the first few days should be scanty. Unless some threatening symptoms appear, we need not continue rigidity in respect to diet longer than a very few days. Perfect quietude should be observed for a week at least, and then return to exercise should be slow, and by very gradual steps.

There cannot be any very definite directions given as to the treatment of inflammation, or any other of the effects of the operations, other than may be found with reference to them in any well digested treatise.

We must be watchful to perceive the very beginning of them, and energetic in the treatment. An incipient inflammation may be subdued much easier than a well established one. In instituting measures to combat inflammation or any of these effects, we must carefully consider the condition of our patient; there being no question that tonics and even stimulants with anodynes, are better adapted to cure inflammation than depletion in patients of this kind, under certain circumstances. It is only in the young and robust, well nourished at the time, that depletion can be extensively used; in moderation when early used, there are but few who will not be benefited by it, even when we must follow it with quinine and stimulants. There are a few chronic cases in broken down constitutions, emaciated, highly debilitated, and particularly dyspeptic with depraved secretions generally, that we must sustain from the time of the completion of the operation, in order to prevent inflammation and exhaustion, one or both.

IRON IN CHLOROSIS.—M. TROSSEAU is now strongly of opinion that in those cases of chlorosis in which there is a tendency to tubercular disease of the lungs, preparations of iron, administered for some length of time, favor and hasten the development of the tubercles. It is, therefore, of every importance in treatment to distinguish between true chlorosis, and what he calls pseudo-chlorosis.—*Brit. Med. Jour.*

ARTICLE XI.

VALEDICTORY ADDRESS

TO THE GRADUATING CLASS OF THE MEDICAL DEPARTMENT OF
THE LIND UNIVERSITY—MARCH 4, 1862.

By J. H. HOLLISTER, M. D., Prof. of Anatomy.

GENTLEMEN:—In an age of activities, such as were never before witnessed, you are summoned to positions of manhood and the responsibilities of a noble profession. “Excelsior,” is the representative motto for the men of the nineteenth century. The great mass of mind was never so thoroughly roused, so nerved to action, nor so restive in restraint as now. The attainments of yesterday, are the means of greater achievements to-day, and these give promise of a still more hopeful to-morrow. In all the avenues of trade, in the rapid development of the arts and sciences, in the advances of the professions, as in the diplomacy of nations, we may every where behold the newly wrought, but enduring monuments of masterly mental achievement.

The dark and dreamy ages, when canonized authors and antiquated theories were safe from criticism, are past. Then, the traditions of the fathers were a law unto their children for belief and action; they were innocent of departures from, or additions to the ancient faith, and never guilty of witty inventions.

But upon that Cimmerian darkness, the day began at length to dawn. For three centuries, its brightness has been ever increasing, till now it seems hastening on to its meridian splendor.

Scanning, impartially as we may, the history of the past, our wonder is that for more than fifty centuries, men could have lived and done so little. Our equal wonder is, that in the last three hundred years, they should have done so much.

The more we dwell upon the facts, the greater seems the disparity of attainments in the two periods, and the less our partiality for the present age.

Three centuries ago, the cumbrous folds of papyrus and parchment manuscripts, were the treasures of the affluent alone. To-day, the inspired utterance has its fulfillment, that to the making of books, there is no end; and the printed pages fall around us in numbers, as fall the forest leaves in autumn. They hold in sacred trust for the ages coming, the grand old thoughts quarried by master minds of former generations. They treasure alike the utterances of sympathy and selfishness, of love and hate, of gladness and sadness, that may be breathed from heart to heart.

The history of the *press* is brief. It was a mighty power unheralded. Silently moulding the opinions of mankind, it was the grand preparative for the astonishing results which we now behold. It is to-day, the grand Archimedian lever, which poised upon the fulcrum of eternal truth, moves the world.

Three centuries ago, we were ignorant of the power and use of steam. Till within our own time the noble steamer had never sported with the winds, nor bid defiance to the waves, in answer to a human will. Only fifty years ago, its first progenitor was termed the "Fulton Folly." Steam has given birth to the great railway system, and shall yet so cheapen and quicken the modes of travel, as that only the rich may afford the time and luxury of going on foot. It quickens into form, perfects and cheapens nearly every fabric that ministers to human want. It calls man upward from the menial exercise of his physical strength alone to a higher class of labors, which shall more develop his mental powers. It bids him earn his daily bread by the sweat of a brow that covers a thinking head.

A still greater marvel of our time, is the electric telegraph. Its missives are for the millions, and they out-speed the sun in flight. Though there be a temporary check to their Atlantic transit, yet steadily the tiny wires are spanning the Siberian hills, to reach us by the Behring Straits and our western shores.

Then will the evening telegram recount the days' events in

every quarter of the globe. Then to, the nations shall be given a common language; from intimacy of relation shall spring a common sympathy; and the day be ushered, of a common brotherhood.

And when, as but yesterday, DAGUERRE, that light of France, commanded the sun to paint, and it obeyed; then was there a march of ages in the fine arts.

What pencil or brush so delicate and truthful as the sun-beam? what pallet of colors can equal the solar spectrum? Perish then, the art of embalming. Treasure no more the unsightly forms of departed friends, as in the catacombs of Alexandria and Thebes. How beautifully the pure light of heaven traces the sparkling, speaking, features of our friends, to be our cherished souvenirs when they are gone. The album shall be, henceforth, the representative of successive generations, esteemed in every household, the most precious of earthly treasures.

The stereoscopic panorama shall yet permit us, at a single sitting, to behold the beauties of Switzer and Italian scenery—Scotia's lakes and hills will be added to the beautiful views in our western world. We shall traverse whole continents in an evening. Then from Minnehaha to the Gulf, we shall behold the beautiful scenery of the Mississippi passing before us with not a city, bluff, or rivulet left out, all standing in bold relief, and to the eye so truthful, that we shall seem to gaze upon the scenes themselves.

To none shall it minister benefits more than to our own profession. If it trace the forms and features of those in health and beauty, it shall as faithfully portray the waste and deformity which diseases produce. It shall truthfully represent the most delicate dissections; and the man now lives, who, by means of the photographic anatomy, shall confer a signal benefit upon the profession.

To the medical student, not long in the future, shall be presented the illustrated catalogues of all the prominent museums of the world.

The stereoscope will familiarize him with the buildings

and their compartments, with shelvings and alcoves, and with specimens as there arranged. Then with the history of each series of specimens before him, he may turn his eye to the magic glass and behold each specimen in its several attitudes, perfect in form and color, forbidden only the privilege of handling it. I ardently anticipate, and can hardly await the achievements of photography as a means of medical instruction.

Time would fail me to tell of the worlds of little things which the microscope is now revealing. It dissipates a thousand mysteries, revealing facts of most intense interest, which but for it, had never been known. It spreads before us volumes of evidences in Natural Theology, as beautiful, as wonderful, and as conclusive as may be the testimonies of the heaven above, or the earth around us.

I may not even advert to the multitude of wonderful inventions with which our age is teeming. These all bear witness to an energy and profundity of thought, of which till now, the human mind was deemed incapable.

Every department of science gives evidence of an awakened enthusiasm. What a triumph was that of mathematical calculation, determining the size and position of an undiscovered star, which should correlative the forces of gravitation. The telescope was adjusted to the predetermined range, and the stranger star appeared.

Now too, we read the "testimony of the rocks," and trace the records of the ages before man was made. Now chemistry brings forth her rich and varied contributions for the health and comfort of mankind, becoming the handmaid of manufacture, and the mother of agriculture.

If we turn to the professions, here are superior displays of talent and research. No theories are now too sacred for review—no human authorities dictate the forms of our belief. Proudly and respectfully we point to those venerable heroes whose feet were planted upon the ever enduring foundations of truth—but *theories*, be they never so ingenious and beautiful, yet wanting this central crowning element, are swept away, as flies the gossamer before the driving storm.

If from peaceful pursuits, we pass to those of war—here too, we find a record in keeping with the age. An army of our own brothers, more than half a million in numbers, are gone forth to defend the cherished bequest of our fathers. An army so intelligent, so finely equipped—and more brave, the world never saw—and every man, a volunteer!

Strike from the world's treasury the press and its products, and turn back to the simpler pursuits of life, its noble army of laborers; turn again to oblivion all the appliances of steam power, and the thousand facilities of manufacture; traverse the seas with fickle wind, and the land by post coaches, or on foot; let the foaming steed be the bearer of dispatches, and the human hand the power that shall minister to our daily wants; blot out the labors of the chemist, and the beauties of the photograph; strike down the serried ranks of gun clad infantry, and the iron ships of war, with rifled cannon and the death dealing mortar, and give in their place a mercenary and servile band of lancers and arrow men, with battering rams and wooden horses for fenced cities, and sling and hurling rocks for death-work on the plain; take from us the loom, the cotton gin, the reaper, the sewing machine, and a thousand like inventions, and you would return us to the condition in which for more than fifty centuries men lived in ignorance of their God-given powers, and lived to such little purpose.

View the present condition of the world, and tell me if it is not a matter of astonishment that in the last three centuries, and mainly in the *present*, such wondrous advancement should have attested the powers of the human mind, when nerved to its most vigorous efforts.

It is a noble age in which to live. And amid the competition of such activities, to stand up firmly in the great struggle, and hold an equality with the *successful*, yields a recompense which well repays the effort.

In this age, and with these surroundings, you have allied your life labors to the science of medicine, and are to devote your energies to the practice of the healing art.

And I have dwelt thus long upon what might seem trite

and irrelevant on an occasion like this, that I might in this, my last address to you, impress still more indelibly the fact, that for your *success* in the profession, there is demanded of you a devotion to, and love for it, which other influences shall not divert; an energy that tires not, an enthusiasm even, which surmounts all obstacles, and satiates only with success. Harbor not the thought of filling second or third rate positions in your profession, but nerve to the conflict and welcome the effort that shall place you in the fore front of your calling.

Command, as your just desert, the respect and confidence of those who have achieved true eminence themselves, and value the like attainments in others. Do honor to your profession and to yourselves, or *desert* it entirely, for places of less fearful responsibility, and more lucrative returns. Dream not of *indolence* while hoping for *success* in the practice of medicine. It has for its votaries no syren song of ease. It promises only those pleasures which are felt when success has crowned the arduous, vigorous struggle. But for the faithful there are rewards which are worthy of the most vigorous efforts of your mature manhood.—To be satisfied with less, is to be unworthy of yourselves, of your age, and of your profession.

Do not think that I overrate the labors before you. I cannot, if I would.

The finger of Jehovah has never traced for you on tables of stone the great central truths of medical science, as it hath for the guidance of theologians and jurists. Nor hath He given upon the tablets of our hearts the unerring intuitions of medical practice. He has placed before us the human body, infinitely more complex, and perfect as a machine, than human genius can comprehend, mysteriously allied to a soul of which we know still less, and bid us study the anomaly of natural laws suspended, through the agency of vital power, developed by reason of such union.

Yours is the privilege, gentlemen, of associating your labor with those of some of the most noble and self-sacrificing spirits that ever have lived. Men who shrank not from plague nor pestilence, that they might learn its nature and mitigate

its terrors; men, who like HAYES were summoned to the courts of kings as instructors; men, who like the youthful lamented BICHAT, spent their life-efforts in rooms so tainted by reason of experiments to determine the progress of decomposition of tissues, and in the study of morbid anatomy, that the very air they breathed was charged with fatal poison; men who have been the saviours of thousands upon the battle field, and in crowded hospitals, whose labors and hazards the world has too little known, and too little prized. But to be honorably associated with such, requires the aim and effort of men inspired with love for our profession, and a restless determination to excel. It requires that the *labor* be appreciated, and the *means* at once made use of which shall insure the desired result.

The advances in medical science have been attended with hereulean labors.

To attain the present intimate knowledge of the human body; to understand the physiological actions of all its organs; to note the changes to which they are subject by reason of disease; to classify the great number of affections which we are called to treat; to comprehend the sanitary laws of mind and body; to acquaint ourselves with all the real therapeutic effects of the numerous and varied articles of the *Materia Medica*,—these were the labor of a life time—labor, from which one might shrink, were he not, by reason of such knowledge, to become of untold value to the world.

And yet this is but the real preparative work to an intelligent practice of the healing art; the knowledge with which you are to approach the bedside of the patient, and commence the practice of medicine.

I do not say that such *are* the attainments of all who assume such positions and such responsibilities. It is a matter of deep regret—nay, of grief—to the educated and conscientious, that, in so many instances, the facts are far otherwise, and that by the three-fold influence of ignorant practitioners, of cunning quacks, and money scheming patent-venders, the profession is brought into unmerited disgrace.

Many, indeed, have been the errors of visionists and theorists of honest intention, and our art has suffered in its onward progress by reason of them.

The Bible should have settled all disputes upon matters of theology if men would think alike; and the Golden Rule have governed the decisions of jurists if justice were the same idea in every mind; but, despite that heaven-given revelation, divines and would-be divines do disagree; and among the ermine-clad are found strangely conflicting rulings. But I am not to doubt the truths of theology, nor am I to discard the courts.

There is a pure theology—there can be but one. There are eternal truths for the guidance of jurists, in conflict with which they should never attempt to rule, knowing their decisions must be reversed. There is but a single science of medicine—there can be but one. Man has certain relations to his surroundings, and they are the same whoever may study them. The influences that injure and which benefit him are fixed. The means of benefiting him, and of modifying or removing his ill, are not conflicting. We may sometimes vary our efforts for accomplishing a desired result, as the jurist may, by one illustration or another, expound the law; but the result sought is one and the same—recovery.

When in theology I find strange discrepancy in teachings, I betake myself not alone to the word of inspiration for my conclusions of right. I confess my inability to grasp, at the moment, the abstruse points at issue, and I hesitate to trust my judgment. I turn with reverence to those who have been of undoubted ability, of unquestioned piety, and whose teachings seem but the elucidations of divine truth. If for successive ages the great and good accept and teach a similar faith, I accept that doctrine as safe for me, and to listen to such teachings I would ever frequent the house of God.

I look with suspicion upon all those placards and posters which announce the arrival of distinguished professors and titled men, who denounce the wisdom of the old divines as foolishness, and promise to show men a more reasonable and

free way of salvation, and only charge ten cents for admission.

So, too, when there are discrepancies in the rulings of the courts, I profess not always to be able to balance the rights at issue, of belligerents, but I seek the opinions of men of known ability, of spotless integrity, in positions free from any possibility of bias, and if I find, for the successive ages, the rulings of such men have been in the main in harmony, I am influenced by their views and receive my opinion as the result of their united wisdom.

I think eminent jurists have never been known to publish their own greatness, or the number and correctness of their rulings. The bare-faced act would brand the villain as a legal quack, and from such disgrace the legal profession is exempt.

By such rule it would be our pride and pleasure, that men should judge of us. It cannot be that the carefully observed facts of most eminent men should be of no importance; that there should be no gradually developing but permanent system of medicine. It cannot be that we are to exercise less self-respect, and boast of our abilities on posted handbills, and by displayed advertisements. How long shall such unmasked quackery be tolerated and patronized in an intelligent and sensible community?

How long shall confident boasters of success and braggart villains, with specious promises of cure, deceive the unfortunate and degrade the profession?

Till such a time as sensible men shall use their influence in a becoming manner with reference to the patronage of these deceiving scoundrels.

And how long, too, shall the ready assurance of many of our fair ones declare to us the method of our practice?

It is to me a matter of surprise that many of our ladies of good intention, perhaps, should so readily assume an ability to treat disease to which our wisest practitioners have not attained.

As ignorant of the human system and its necessities as they are of the contents of a Chinese puzzle-box, if they would only confess what sensible men all know, they are prompt, and in many instances officious and gratuitous, in passing upon the relative merits of the so-called systems of practice; are never in doubt as to the needed medication in a given disease; and pass upon the relative abilities of medical men with a dispatch and nonchalance, which put modesty and ordinary ability quite to the blush.

I speak not thus of all. I only allude to that well-meaning, but evil-doing brood in our communities, which may be termed medical busy-bodies, flattered by a certain class of practitioners for the train of influences which follow in their pathway.

If their delicate potations and aromas do no good, how do they know they will do no hurt? If the chimney simply be burning out, their labors of love may be all right, but, if the house be really on fire, while their delicate fingers gather pearly dewdrops from beautiful flowers, and dampen the doorsteps with the pure crystal waters from heaven, which surely can do no harm, that house may burn down, and amid its ruins may smoulder the form of the dearest idle around which their affections shall ever twine.

The taste of the child may govern the whim of the mother. The mother controls the father's purse, and that purse, if it is a long one, always procures the sugar prescription; and, if nature is adequate to the work, it may all be well enough. But, when the hour of sad anguish is at hand, if there be any truth and value in the testimony of worthy men and active remedies, that family reckons without its medical aid.

Do not deem me disturbed for the permanence of medical science, or the successful career of its worthy practitioners, by what I have said. I think the matter of a medical fee for us can hardly equal in importance the health and happiness of the one whose life is imperiled, and which with regret we behold trifled with, or needlessly thrown away.

Nor would I counsel a course of treatment of unnecessary severity. I more deprecate the aimless dosing treatment, than

that to which I have already referred. There have been errors in medical practice—gross ones, too. So divines burned witches two hundred years ago,—but the wiser ones have abandoned that practice some time since; and gifted and skillful men have been prudent and cautious in the use of active medicines—frank to undeceive those who were not in need, and gradually leading their patients to an intelligent care of themselves, without the expense and deception to which another class are constantly subject.

The time was when the practice of medicine was greatly overrated, and all cures were the veritable results of wise medication, as the people believed. Strange and diverse are the teachings and practice of the healing art in these latter days. And, since there are recoveries under all forms of treatment, the community are driven to the nearly opposite extreme, and are skeptical as to the benefits of medicines at all.

But the course of medical instruction is daily more simple, more practical, and in its results more beneficial to mankind.

The necessity of thorough education is more and more apparent in nearly all our schools; the facilities of instruction are everywhere being extended; and I may simply add that, for the purpose of testing a method of medical teaching which should increase still more the student's privileges, this school had its origin.

I have only alluded to your surroundings, not as discouragements, but that you should so labor to fit yourselves by the means at hand as to render broad and marked the distinction between your course as professional gentlemen, and the noisy and unscrupulous impostors with whom you will be in contact.

If you shall keep pace with the times, your labors are only now commenced. No profession can boast of abler or more industrious men than to-day, in every civilized nation, are freely contributing their life-labors to the advancement of medical science. Our journals are replete with discoveries and valuable instructions. Not a nation, but may be proud of

its teachers and its writers, whose reputation and discoveries we claim as a common heritage.

Here, at the outset of your career, if you dare to assume a mission so noble and responsibilities so fearful, pledge in honor your vigorous efforts to attain that knowledge of your profession which shall in the future render you its worthy representatives.

Gentlemen, hitherto I have addressed you as students; I hail you now as brothers. Months of intimate relation have changed a casual acquaintance, or the meeting of strangers, for this, the parting of intimate friends.

You will bear witness to the earnest efforts of the Faculty in every possible manner to render the time of your sojourn with us of the greatest possible profit to yourselves.

Especially in the clinical department has this been eminently true, and I know that you appreciate the fact.

You have the accredited testimonials of this institution as a just tribute of our esteem for you and for your professional attainments.

Guard well the honor of your Alma Mater, and give her in the profession, in your persons, a representation of which she may be justly proud.

Strive each of you to render life a noble success. To your natural qualifications add the cultivation of intellect, of morals, and of manners, which shall, to the best of your ability, fit you for your noble mission.

How precious are the jewels yet to be committed to your guardianship! How saddened hearts will thrill or cease to beat, as the weal or woe of the sick are graven upon your features, even in the still room when death seems near!

If then and there you comprehend the sufferer's want, and can seize the remedy, familiar perhaps to all, but whose virtue none may know, and by your discrimination, so apply it that the exhausted powers of nature shall feel its aid, and, rallying, restore the system to its former health, God never gave to man but a single nobler deed to do, and that, to point that spirit to Himself!

It is needless to add that your moral integrity should be beyond the possibility of question.

Every claim of your profession, every relation with the community, every interest of your own, point to a spotless life and a pure heart as your peculiar requisite.

Degrade not yourselves nor your calling by impurity of language, of habit—nay, even of thought.

Shun all profanity; shun the intoxicating bowl as a deadliest enemy; and shun, too, those disgusting personal habits which render not a few physicians so objectionable in the sick room.

Let your warm-hearted philanthropy render you ever alive to the sufferings of your fellow-beings. It should lead you to the lone and humble cottage, if there dwell the children of want, though no pecuniary influence should tempt you there. The satisfaction which arises from the consciousness of benefiting a fellow-being, or alleviating his sufferings and healing his maladies, shall in the future be a reward unequalled by gold. The gratitude of the poor shall centre on you, and the blessings of a philanthropist shall crown your lives.

You should be men of prompt decision. From the very nature of your profession, where the stout heart fails and the strong arm trembles, there should your hand be steady and your firmness manifest. The saving of a life may be the work of a moment, but that act may require the quick discernment, the mature judgment, and the intrepid coolness which well might covet a longer time for their proper exhibit.

Trespass not, in the most delicate manner, upon the rules of etiquette with your professional brethren. Stand gently, firmly, manfully, for your rights as medical men in every respect, and as firmly and as manfully regard and maintain the rights of your associates. Be open-hearted, frank, courteous, in all your professional relations: and from such as abuse such generous confidence, quietly withdraw yourselves, and seek not their fellowship, for such are dangerous men. But, when professional worth is found, wed its wealth and fortune to yourselves as with hooks of steel.

To increase your efficiency and usefulness, you should be the diligent students of human nature. That knowledge should prepare you for every possible vicissitude. Called to act among all classes of society, your dignified yet affable deportment should commend you to the poor, while your general knowledge and careful observance of the rules of etiquette should render you at once the welcome and profitable companion of the affluent and cultivated.

Let me add, in conclusion, you will only, in the highest sense, meet the requirements of your mission when, with devout reverence you recognize in yourselves the simple instruments in the hands of Him, with whom are the issues of life, in the accomplishment of His merciful purposes to a suffering humanity. And, when all that men may do, has been accomplished, it may be to you the consolation which every medical man needs in his constant grapples with the King of Terrors, to commit the issue of the struggle to Him who dealeth gently, and who doeth all things well.

To-night there is a severance of our former pleasing relations. You turn from us to greet the loved ones at home, and practice the profession of your choice. Your journey will be along the banks of that cold stream, into the darkness of which, fondest friends are constantly passing, but from which none ever return.

Upon the banks of the river of death you shall pitch your ever-moving tents as wreckers and rescuers. The unseen power that draws to that shore the infant and the aged, you shall sometimes successfully breast; snatch the victim from the Lethean tide; brush the tears from weeping eyes, and bid the sorrowing bear back their precious ones, with joyous steps and happy hearts, to life and home again.

Anon, the mother, like the willow bent to earth, shall bring her first-born, her darling child, quite to the river's edge, and wildly wish to reach beyond and grasp again the parted hand. When she turns to you with piteous prayer, "Oh, Doctor, save my child!" then will you feel, as you never felt before, the feebleness of human agencies, and you can only say, God's will, sad heart! God's will be done.

From the high and rugged cliffs above you, with one fell plunge, the mad inebriate, the suicide, and the assassin's victim shall sink beneath the dark wave, with never a rescuing hand for their recovery.

At his appointed time the aged man shall come—green the velvet lawn upon which he treads; gentle the banks' descent; kind friends attend; calm and peacefully he gathers his vesture around him, and sinks so gently to his rest that your experienced eye scarce notes the moment when his frail bark had parted for the other side. Peaceful and happy, it was his time; he had no need of you. You had no healing balm for him.

Thus shall you journey on. Upon the one hand are the agonies, the groans and tears of the sorrowing; and upon the other, the darkness and stillness of that mysterious river.

To thousands of hearts you shall be as angels of mercy—often to save, always to comfort.

Prize, then, the privilege of such noble deeds, and, in a calm old age, may yours be a peaceful transit to the shining shore where our vocation is unknown.

Till then, go forth, and quit yourselves like men!

Till then, go forth, and ever—FARE-YOU-WELL.

ARTICLE XII.

A FATAL CASE OF A FOREIGN BODY IN THE
AIR PASSAGES.

By JOHN BARTLETT, M. D., Pesotum, Ills.

On the morning of the 20th of October last, a healthy female child of Mr. W. H., aged two and a half years, was seized with a violent fit of choking. After some minutes of extreme distress, during which a valvular sound was heard, as of a body moving to and fro in the windpipe, relief was obtained. Though there remained some wheezing, and, perhaps, some change in the color of the lips, the child sat up,

and was disposed to engage in play. At night, the breathing becoming less quiet, and there being some restlessness, slight emesis was produced by a domestic remedy, and from that time the improvement was said to be constant, until eleven o'clock on the following night, when an examination of the case was made by me as complete as the extreme timidity and irritability of the patient would permit.

The mouth was closed, and the alae-nasi quiet; the color of the lips was good. The slight sigh at the close of expiration, noticed some hours previously, had ceased; the respiration, noiseless and easy, was 28, as the patient lay sleeping on the face: 30-32, when awake and semi-recumbent. The pulse was 139-140; the skin natural.

The respiratory movements of the two sides of the chest, as reviewed from behind, were alike in extent; but on the right side, the inspiration was attended by a significant *atmospheric forcing in* of the intercostal spaces, causing the ribs of this side to be better marked than their fellows opposite. On viewing the front of the chest, the conditions presented were not constant. Sometimes but little movement was noticed on the right side; the next moment no difference in the motion of the sides could be observed—and this without change of position.

Auscultation revealed, posteriorly on the right side, an imperfect murmur, rather tubular than vesicular; on the left side the respiration was exaggerated. At the root of the lungs no extraordinary sounds were detected.—Anteriorly the same general auscultatory phenomena obtained toward the median line, the puerile breathing of the left side obscured the blowing respiration of the right. In the right lateral region, a peculiar whistling, tubal sound was detected, in inspiration and expiration: immediately afterward, without change of position, during a full inspiratory effort, this sound gave place to the regular vesicular murmur.

At this time, the almost perfect quietude of the child had lulled the relatives into the false hope, that nothing had really passed into the windpipe. The evidence of the presence of a

foreign body in the right bronchus was almost positive. It remained to determine, if possible, its nature. From a critical inquiry into the circumstances of the choking, it was unfortunately concluded that the body was a piece of a butter cake, which had been given to the child a few minutes before the accident. Being without the traditions of experience, as to the results, when substances liable to speedy disintegration, remain in the air passages, interference was deferred, that desired information might be obtained. In a few hours, I was hurriedly summoned. An effort at coughing had thrown the body from the bronchus, and the patient was dying of suffocation. Hearing upon entering the house that she still breathed, I opened the trachea, but the child was dead. Artificial respiration, with other restorative measures, persisted in for an hour, were without avail.

The offending substance proved to be a white bean, so swollen as nearly to fill the trachea, having an area in its small diameters of .083 inches. The left anterior jugular vein was large, and deviating to the right, lay immediately in the line of incision. No examination of the chest was allowed.

An important fact in physiology, and principle in practice, find illustration in this case, to wit:—

A foreign body may rest, for a time, in the air passages producing little or no constitutional disturbance.

The immediate opening of the windpipe is the only security for the patient in these cases; and all means for dislodging a body prior to the operation are unsafe.

March 24th, 1862.

A GIGANTIC SAURIAN.—The discovery of the fossil bones of a new and gigantic saurian, in a cutting recently made for a railway line near Poligny, has just been announced by M. Bertherand. The animal must have been between 90 and 118 feet in length, and must have existed towards the end of the Triassic period.

Proceedings of Societies.

ANNUAL MEETING OF THE CHICAGO MEDICAL SOCIETY.

The Regular Annual Meeting of this Society was held in Larmon's Block, on the evening of the 4th inst.

The following officers were elected for the ensuing year :

For President, S. WICKERSHAM, M. D.

Vice President, G. PAOLI, M. D.

Secretary and Treasurer, E. L. HOLMES, M. D.

Delegates to the State Medical Society, Drs. ORRIN SMITH, THOMAS BEVAN, S. WICKERSHAM, E. L. HOLMES.

After the election of officers, the Society proceeded with the usual order of business.

Dr. N. S. DAVIS, called the attention of members to the prevalence of scarlet fever, in the South Division of the city, and related the chief characteristics of several cases. Some of them were of a highly malignant character, showing early and alarming depression of the nervous centres. In one family on Franklin street, south of Adams, out of seven children, six had been attacked, of whom two died, one on the third, and the other on the fourth day. The other four recovered. The residence of this family is in a wet and unhealthy part of the city.

Indeed, most of the cases he had observed occurred in that part of the South Division lying between Clark street and the south branch of the river.

Dr. WICKERSHAM, also stated that he had met with an increased number of cases in the same section of the city, and a larger ratio of mortality than usual.

Dr. AMMERMAN, reported two cases of disease of the femur, for the relief of which he had performed amputation at the hip-joint. The first was a boy in the County Alms-house, who

had been attacked three months previously with severe periostitis of the lower third of the femur. At the time he was visited by Dr. A., the lower half of the thigh was greatly enlarged, measuring about 20 inches in circumference, dense to the touch, with many large tortuous veins visible on the surface, and several fistulous openings, chiefly on the inner side, through which a large amount of pus was discharged daily. The limb was removed by amputation at the hip; but the patient was too much exhausted, and died in about four days. The femur, which was presented for the examination of the Society, had undergone extensive morbid changes. The lower third was spongy and partially destroyed. The condyles had become spontaneously separated from the shaft of the bone, and were displaced backward and upward; while from the lower third of the shaft, numerous spicula of new bone had been formed, projecting at various angles from one to two inches in length. The texture of the bone throughout its whole length appeared to have been diseased, as it was found softened, and very vascular where it was cut through near the trochanters. Although this was reported under the name of *necrosis*, would not the description of the swollen part of the limb, and the state of the bone, justify us in placing it in the list of osteoid cancers, or malignant disease of the bone? Its progress was unusually rapid, only three months having elapsed since the first commencement of the disease.

The second case was that of a soldier, whose thigh bone was injured by a musket or rifle ball early last summer. From an examination of the femur, which was presented to the Society, it was evident that the primary injury was followed by extensive inflammation, and finally, death of the whole thickness of the bone from about two inches above the condyles to the trochanters. A case of new bone, of considerable thickness, had completely and closely invested the old, except a few openings near the original seat of injury. The history of the case was not given very fully, but the principal facts stated, were, that several months after the injury, the patient was brought to his home, a few miles from this city.

Dr. Amerman, on visiting him, found him much emaciated, and suffering from diarrhœa, hectic, and so much purulent discharge from the fistulous openings in the limb, that it was thought prudent to defer any operative procedure until the general health could be improved. After a short period of palliative treatment, an operation was undertaken for the purpose of removing the diseased and dead portion of the femur. The outer part of the thigh was laid open, and with the trephine and gouge, the case of new bone laid open freely; but the dead shaft of bone within was found so closely invested as to be immovably fixed in its position. A section, two or three inches in length was removed, but it was found impossible to remove the whole, without exsecting three-fourths of the entire femur. Consequently, the wound was closed up, and suitable dressings applied to the limb. The patient bore the operation well, and for a few weeks his general health improved satisfactorily. After this, the hectic, diarrhœa, and other bad symptoms again supervened; and the patient and his friends became anxious to have the whole limb removed. This was done by Dr. A., who amputated at the hip. The patient died, however, in one or two days after the operation. The chief peculiarity in this case was, the extent of the necrosis, the amount of new bone encasing the old, and the entire failure of the process of exfoliation or separation of the dead from the living structure.

After resolving to hold its future meetings on the first Friday evening of each month, the Society adjourned.

DEATH OF M. BRETONNEAU.—This distinguished physician has just died at an advanced age, at Passy, near Paris, where he occupied a noble villa. M. Bretonneau's name is connected with some of the most valuable discoveries in medicine, and had risen to great eminence by his teachings and original turn of mind. The two leading men of the medicine and surgery of Paris respectively, M. Trousseau and M. Velpeau, were his pupils.—*London Lancet*.

Selections.

CLINICAL LECTURE ON ANÆMIA.

By THOS. K. CHAMBERS, M. D.

Reprinted from *Medical News and Library*.

GENTLEMEN: You will remember the corpse-like pallor, made more conspicuous by red hair, of a girl admitted this day fortnight into Victoria Ward. She smiled courteously, but was unable to rise from her bed. Her history is as follows:—

Margaret C., now aged 20, seems to have very good health in general, as is shown by her remembering that she had such an unimportant ailment as a pain in the right side when she was a school girl of seven years old. She seems to have been carefully brought up by a step father in a higher class of life; but three years ago she lost him, and had to go into service as a housemaid. For this work she was hardly strong enough, and, perhaps, too tenderly educated, and after eighteen months' trial, she gave it up, and was apprenticed to a Berlin-wool shop. In this place her mental superiority was apparently recognized, for she quickly became forewoman, with three girls under her, in a shop at Maidstone. She felt this responsibility a good deal, and also thought the closeness of the shop did not suit her, though it did not seem to make others ill. However, she retained a high, bright color in her face, for which she seems to have been somewhat admired, till nine months ago, when she began to lose it, and in a few weeks became as waxlike in hue as she is now. At first her appetite was large, and she always seemed in want of food; but after three months it failed, then ceased entirely, and she took a disgust to food. She had a good deal of pain in the epigastrium and to the left side of it, and also palpitation of the heart. Three months ago she spat up some blood, and had a little cough, which frightened her sadly. Three times during the nine months she has had attacks of low spirits, with crying, but does not appear at all hysterical now. The catamenia always were quite regular and sufficient till the commencement of the anæmia nine months ago, when they began to get scantier and scantier, and at last ceased entirely.

The urine is pale and watery, the stools scanty and steadily rare; but there is no sudden gush of bulky stools, diarrhoea alternating with constipation, or other indications of accumulation of feces in the intestines.

She expands her chest perfectly, and there are no abnormalities to give rise to a suspicion of pulmonary tubercle, at all events in such a quantity as to cause anæmia. There was a soft systolic murmur in the heart when she was agitated at first admission; but it went away after she had rested in bed five days.

Anæmia is found during life in a great number of the organic changes of tissues which you see in museums and lectures on morbid anatomy, and may discover by diagnosis. In other cases of equal importance and prominence it is absent. Very frequently, too, you find it in an extremely high degree in cases where you can discover no organic change in the solids at all, and where, from the transitory nature of the bloodlessness, there is reason to conclude that such organic changes really do not exist. Under this last category comes the patient who is the occasion of my present Lecture.

So anæmia or deficient redness in the blood, shows a deficiency of life in the ministers to that redness; either the supply of food is too small, or its assimilation is defective, in both cases either absolutely or relatively, to the existing demand.

In many instances it is easy enough to lay the finger upon the instrument of life which is to blame. We can detect without difficulty the causes at work—starvation, which anybody can understand leads to an absence of the organic matters made out of food; disease of stomach, in which the aliments are not prepared for assimilation; disease of liver and duodenum, producing the same result; disease of intestines, or their glands taking up no adipose matter especially, and so preventing cell growth; disease of the spleen or lungs, which physiological experiments, independent even of our observations of morbid phenomena, show to be answerable for the formation of new blood disks in a way yet unknown; mental derangement, care, disappointment, which so readily arrest the activity of the assimilating viscera; these agencies, and many more, are readily comprehended as causes of anæmia. But there are a considerable number of cases where nothing tangible of this sort is to be made out, yet where the paleness of the blood seen in the face, lips, tongue, or in a drop taken from a pricked finger, and evidenced by the faintness, weakness, palpitation, anasarca, amenorrhœa, etc., are even more more marked than where demonstrable lesion is to

be found. So it is in the present instance. The young woman's history gives no reason to suspect any organic disease of the lungs or other organs, and the functions of life were fairly performed till she began to get pale and languid nine months ago. The want of red blood, which we look upon as the important feature in her case, attracted her attention also particularly, as she had previously had a fresh, high color. Then, after an interval amply sufficient to enable us to separate cause and effect, come the symptoms which I wish to notice as the consequence of anæmia. Causes, no doubt, they are in some instances, but here consequences. I mean the loss of appetite, impeded circulation, cessation of menses, hemorrhage from respiratory mucous membrane, and hysteria in a person unaccustomed to it.

The only explanation she can give of her loss of health is her having been employed in a shop less ventilated than she had been accustomed to, and having the responsibility of the concern thrown upon her. Alone neither would have been sufficient, as the shopwomen under her do not appear to have suffered from the air; while, on the other hand, women in retail business are not as a rule anæmic. But still I think that both together may perhaps be fairly saddled with the blame, for whilst the increased mental labor was increasing metamorphosis, the greater demand was not responded to by greater supply, but, on the contrary, assimilation was checked by the even moderate unwholesomeness of the respired air.

Of course, the not being able to trace deeper the anatomical cause arises from the imperfection of our knowledge, but it does not arise from neglecting to apply such knowledge as we possess to practical medicine. If we were to make an autopsy of this patient instead of curing her, we should in all probability find no more lesions in any of the tissues capable of accounting for the disease exhibited in the blood than we have already found. A fortnight ago Dr. Gull, Mr. Malton, and I examined the body of a gentleman who had died at forty-six of anæmia, and made separately microscopical investigations of portions of the several viscera. Nothing abnormal could we find in any part. The typical healthiness of all the tissues was very remarkable in a man of that age. There was not even a single adhesion of the pleura. I mention this in order that you may not lament the opacity of your patient's bodies, or suppose yourselves likely to learn how to treat them better if you could see their insides.

Anæmia, without obvious organic lesion, when properly treated, is a very curable condition, and this should still

further reassure you, that you miss nothing by not being able to study its post-mortem pathology. For transitory and curable states leave but little foot-prints behind them for morbid anatomists. In a great majority of cases they depend upon the mucous membrane, of all the tissues in the body, the one most affected by mortuary changes.

To the mucous membranes I am disposed to attribute the condition in which we find our present patient. The two circumstances to which I have traced the illness both act directly or indirectly on this tissue. The mental exertion involved in an unusual responsibility thrown on a conscientious person would arrest the action of the involuntary muscles which carry along the mass of food through the alimentary canal. You know well the time your food is in leaving the stomach, if you are called to an important midwifery case just after a hearty meal; and several commercial and literary men have complained to me of attacks of vomiting (that is, temporary paralysis of the stomach), when they took dinner alone, and so were apt to let the mind dwell deeply on some interesting subject; and they have told me in wonder that they could dine out and eat and drink all sorts of rich things with impunity. They did not seem aware of the physiological value of frivolous conversation. At the same time that the moral causes thus impeded digestion, the unwholesomeness of the air in the close shop poisoned the mucous membranes, diminishing their vitality and causing them to be abnormally covered with a thick layer of mucus. Remember that, in spite of their name, it is not the business of mucous membranes to secrete mucus; the more perfect is their condition, the more favorable are the surrounding circumstances, the less they do so. From many persons' lungs not a drachm of expectoration is thrown up in a month, and the vast surfaces of the intestines and bladder are equally innocent of even microscopic traces of mucus in the typical health we desire to experience. It is only when the presence of some material agent diminishes their vitality that the mucous membranes exhibit on their surfaces that peculiar substance whence they take their appellation. And the greater the diminution of life, the greater the secretion; a slight cold in the head will be accompanied by slight catarrh, a severe one by excessive catarrh; and the nearer the approach to death, the greater it is, so that the death rattle, or overpowering collection of mucus in the bronchi, is a popular warning that all is over. Be careful not to look upon mucous secretion as augmented life; it is in fact a partial death.

Well, the poisoning air having covered these slowly moving mucous membranes with a thick tenacious coat, the entrance of alimentary substances into the veins and absorbents was impeded, and our patient starved in the midst of plenty. So all the usual signs of starvation followed. First, hunger—by no means a constant accompaniment of chronic deprivation of food, yet sometimes present as here; then anorexia, a much more frequent phenomenon; then paleness, languor, weariness, and pain in the stomach; then anasarca, and, in short, the other more marked symptoms of anæmia.

You must observe that the loss in those constituents of the body, which are of a nitrogenous chemical composition, is more marked than that in the hydrocarbonaceous fat. The reason is, partly, that the destruction of adipose vesicles is somewhat concealed by the saturation of the tissue with serum, which gives it a false plumpness—partly, that fat, being absorbable without much, if any alteration, is easier taken up than fibrin or albumen, which require a chemical solution before they can be absorbed. So that though starved, our patient looks but little emaciated.

All that I have said before, of course has for its end the treatment. My aim in anæmia is to introduce as quickly as I can the largest possible amount of—1, nitrogenous food; 2, iron; 3, chlorine. When I say “introduce” I do not mean “thrown in,” or get swallowed, but assimilated in the system.

As regards the first, it is obvious that if I had written down ever so many “ordinary diets,” a patient to whom the very sight of food was an abomination, would have gained nothing by it; she would simply have gone without. I directed therefore, no meals at all, and no solid food, but a cup of milk with some lime-water in it, to be given as medicine every two hours, and a pint of beef-tea in small, divided doses during the day. After two days she managed an egg also daily, and after twelve days of gradual additions of this sort, you will find her on full allowance of mutton chop, porter, beef-tea, and milk.

Iron is required to supply the new growth of red disks which we hope for, with their metallic constituent. You cannot get it into the system in any way so quickly as the *mistura ferri composita* of the London Pharmacopœia. Large doses of the more soluble salts have an action on the mucous membranes which not only prevents them being taken up, but also arrests the digestion of food. Evidence of the latter is found in loss of appetite and feverishness, and of their own rejection in the blackening of the stools much sooner than by

the form I have approved of. So in spite of the elegant preparations which are constantly put before us, as recommended by the solubility, such as the chloride, acetate, citrate, phosphate and other salts of iron, I prefer the unchemical mixture. It seems as if the carbonate which is preserved from decomposition by the sugar, and the finely-divided oxides diffused through the thick liquid were peculiarly easy of solution in the water saturated with salts and carbonic acid, which (and not pure water) we must remember is the solvent to be considered.

I have found that some cases which did not improve so quickly as I could wish under the above treatment, made a sudden start of improvement when to it, was added the administration of chlorine in the form of warm hydrochloric acid baths. More iron is taken up—the blackening of the feces ceases, and therefore perhaps it may be that the presence of more acid in the system attracts more of the metal. But in a few cases I tried for experiment the hydrochloric acid baths alone, and even then it was beneficial, seeming to confer muscular strength like what are commonly called tonic drugs. I cannot but think, therefore, that it supplies a distinct want in the system, that it is a directly restorative medicine in anæmia.

Nor is it difficult to make this empirical observation accord with rational pathology. In anæmia the blood is more watery than natural; the proportion is deficient, not only of organic matters, but of salts. Chloride of sodium is the most important of these, and the supply of one of the constituents of this material we may reasonably imagine is an aid to the renewal of life, which is the end of all medication.

Besides the above named medicines, you will see, I have ordered *Pil. aloes cum myrrh*, gr. iv. *omni nocte sumenda*. Now, do not suppose that this is ordered merely as a purgative, and that any other purgative would do as well. On the contrary, most purgatives do harm in anæmia. Gamboge, castor-oil, sulphate of magnesia, colocynth, mercury, and several others which produce serous elimination and augment secretion generally, would do harm just in proportion to their activity. It seems established by the experiment of making them act as purgatives when injected into the circulation, that their soluble principles have a destructive agency over the blood; whereas the soluble alkaloid in aloes (aloin) is, in fact, a bitter tonic, and the purgative power of the drug resides in its insoluble resin.* Its action is very slightly

* "Headland on the Action of Medicines," p. 331; and Robiquet in *Journal de Pharmacie*, April, 1856.

eliminative—in moderate doses it only slightly augments the solid brown excreta of the colonic glands, and produces feces feculent in smell and of consistent form; whilst at the same time it restrains, by its bracing bitter, the formation of mucus, as you may clearly see by its action on moist piles, how it dries them up and makes them smart. And by the more vigorous peristaltic action and by the solid mass passed along the gut, the already existing mucus is cleared away. Aloes, therefore, is employed strictly as a clearer of the intestinal, especially of the colonic, membrane. It is joined with myrrh, partly to divide it minutely, and make a small dose go further, and partly to get the advantage of the extra resin.

November 28. A fortnight ago I lectured about an anæmic patient. She was then showing tendency to lose her title to the name, and now she certainly cannot claim it, and has earned our confidence in the statement that her natural hue is rosy. She leaves the Hospital to-day, having manufactured enough red disks to color her blood throughout very sufficiently.

What amount of manufacturing industry does this show? Let us reckon. She weighs 8 stone, or 1792 ounces; of this $\frac{7}{8}$ ths, or 512 ounces is blood; and of this blood $\frac{1}{16}$ th, that is to say, 60 ounces should be red globules. Now the analyses of M. M. Andral and Gavarret show that in cases of anæmia of at all a marked character (as this was), we may expect, at least, three-quarters of the red disks to disappear, so that when she came into the Hospital it may be fairly assumed that she did not possess above 15 ounces; and now I think with equal fairness she may be assumed to have got up to 45, which is conceding that she still wants a quarter of perfect health. By this reckoning she must have made 20 ounces of red blood disks; that is, the most important organic constituent of upwards of 150 ounces of blood, in a month!

Mark the power of renewal which the human body has under favorable circumstances, and learn from this not only the curability of anæmia when it is a disease, but also the facility of repairing artificial loss of blood when it is employed as a remedy.

Only note this, that *if the loss is to be repaired, the means of repair must be given.*

DR. PAMARD, mayor of Avignon, has just been elected to a seat in the House of Representatives of Paris.—*London Lancet.*

RULES FOR GUIDANCE IN CHLOROFORM ACCIDENTS.—By Dr. KIDD.

Reprinted from *Braithwaite*.

I. Young patients up to fifteen, and females bear chloroform best; there seems a general "tolerance" of chloroform in large surgical operations, probably from the hemorrhage keeping the blood moving and preventing engorgement of the cavities of the heart; in females the reflex system is more active than in males.

II. Anæsthesia under chloroform is not at all of the nature of imperfect oxygenation of the blood. But this imperfect oxygenation may be superadded and run parallel with anæsthesia, leading to fainting fits after administration; this is shown also by the plunging or violent efforts of the patient, from black blood in the muscles: every fresh concentrated vapor, from fresh additions to the inhaler, increases these muscular efforts, and always suggests the necessity of more air to the patient.

III. Where simple syncope is feared from fright, it is well to postpone the operation for a week, feeding the patient during this interval on meat and wine; the latter strengthens the muscles of the heart; it is well to bring such a patient under the chloroform, too, in a quiet ward rather than in the excitement of the operating-theatre.

IV. A passive, fixed, starting forward of the eyes, sudden contraction of the pupil, probably from spasm of the fifth nerve, and sudden change of the countenance, are the first signs of danger; the pulse may remain unchanged; chloroform should be kept warm (100° F.); this prevents coughing, which is also a dangerous symptom.

V. Simple syncope is much more dangerous than apnœa; it occurs, however, less frequently.

VI. The operations where nearly all the accidents have occurred have been those for the removal of toe-nails, dead phalanges, tooth-drawing, strabismus, etc., operations on testis, reduction of dislocations,—all more or less connected with tendinous tissues.

VII. The right side of the heart, in apnœa cases, continues to beat long after the pulse stops. Probably while the iris of the patient contracts on approach of light we have a fair

chance of waking up the entire heart; the right side of the heart will beat twelve or sixteen hours after the pulse at the wrist. Faradisation of the phrenic nerve or spine will set the heart in full action in animals through the renewed action of the respiratory muscles. Pulling out the tongue by forceps, so common hitherto in accidents, is a mistake; irritation of the nerves of deglutition stops the diaphragm.

VIII. Of 125 deaths, 54 occurred immediately before operation; 42 during small operations (syncope?); 25 from ether. The number of males in all returns seems to be exactly double that of females, though chloroform has been used in at least 30,000 cases of midwifery, and syncope is common in females. This leads to a suspicion that the deaths from chloroform are like railroad accidents in the management of cases.

IX. Vomiting, as in eataret cases, is best prevented by an aloetic purgative beforehand an hour or two; the stomach also to be empty at the time of operating, and the chloroform pushed well to deep anæsthesia.

X. The "cardiac syncope" of Snow is partly a post-mortem change. These are all cases of apnœa, or where the mischief arises essentially from fixture of the diaphragm. The heart, in fact, pulsates longer than the lung will receive or return the blood—hence the congestion, increased also by the efforts made at resuscitation by the surgeon himself.

XI. As to resuscitation, the means adopted at first should be as gentle as possible; a candle-wick gone out is to be blown in, not smothered by the *nimia diligentia*. Fanning the patient with cold fresh air is first in importance; the hands dabbed with cold water, which has a powerful influence in exciting the brachial and heart nerves. Too much cold water is not advisable. The patient should be brought at once into the open air, if summer, or into a very warm room, if winter; turned on his right side; the soles of the feet and interior of the ear tickled with a pen; his left arm held up, smacked with a wet towel, and that axilla and side of chest dashed with cold water; then artificial respiration tried by "up and down" pressure rather than "rotations." Two or three needles next stuck, where the omohyoid lies at the outer edge of the sternomastoid, so as to hit off, if possible, the phrenic nerve; then the *moist* pole of a Faradisation apparatus tried over the part, or along the spine; the other pole inserted under the floating ribs.

XII. It is probable, in the milder cases, the previous measures will succeed, especially in the instance of apnœa; but if, after five minutes' trial, little progress is made, then

tracheotomy is to be done, and a small tube (a No. 10 india-rubber catheter) passed, and air blown gently into the lungs (a large tube causes emphysema). Some ammonia and warm water should be thrown into the rectum. In syncope cases, transfusion into a vein, of warm water with a little soda in it may wake up the heart. In apnœa (asphyxia as regards the heart, the right cavities gorged), opening a vein is useful. These measures should be continued for at least four to six hours, the body kept warm by hot blankets in a semi-recumbent position, the battery gases, and impure air of a crowd of students rigidly excluded; pure oxygen gas also to be avoided.

Book Notices.

ANATOMY, Descriptive and Surgical. By HENRY GRAY, F. R. S., and Lecturer on Anatomy at St. George's Hospital Medical School. The Drawings by H. V. CARTER, M. D., late Demonstrator of Anatomy at St. George's Hospital. The Dissections jointly by the Author and Dr. CARTER. Second American, from the revised and enlarged London Edition. With Three Hundred and Ninety-Five Engravings on Wood. Imperial octavo. Pp. 816. Philadelphia: BLANCHARD & LEA. 1862.

Time robs many of our adages and proverbs of much of their significance; but no one of these morsels of *word-pemican* loses so much, year by year, as the one which denies the existence of a "royal road to knowledge." Here, for example, is a volume, by the casual turning over of whose pages, for a desultory hour, the least diligent of students will absolutely *absorb* more anatomical knowledge than was formerly vouchsafed to weary hours of patient study of the dull and dignified text-books of our youth.

To those who, as teachers or students, are already familiar with this work, words of commendation would be superfluous. Upon the appearance of the first edition, we took great pleasure in commending it to the profession, as a book of superior claims,—in fact, the best of the text-books on Anatomy. We were confident that a work so eminently adapted to the wants of our American students would be at once appreciated—and the appearance of a second edition in so brief a space of time,

is the most conclusive evidence that we were not mistaken.

For the benefit of those who have not yet had the good fortune to meet with "GRAY's," we may briefly sum up its most valuable points, as follows:—first, and most palpable,—the *illustrations*; these, aside from the fact that they are entirely original, and drawn by Dr. CARTER directly from dissections made by him and Mr. GRAY, embody a distinctive feature, in printing upon each part the name of the object itself, instead of the old plan of numbers and foot-notes,—a plan which not seldom makes confusion worse confounded in the tyro's mind. Osteology, by this mode of accurately-lettered engravings, becomes a pastime, and the temporal bone, with its puzzling petrous portion, becomes a permanent fixture in the mind's eye of the student. Not to offend Mrs. Malaprop, we abstain from comparisons; but the reader may make them for himself as between GRAY and any of the older standard works,—taking, for example, the illustrations of the articulations of the atlas with the axis, and with the occipital bone. *

Secondly, we notice the union of descriptive and regional anatomy,—the small-text remarks on the surgical importance and relations of each part as it comes up for description,—thus presenting to the student the *end* of his labors, while still engaged in mastering the *means*,—holding out to him an inducement for thorough work, showing him the practical value of his studies.

Thirdly, the amount of valuable surgical information, presented in such an apposite manner and conjunction as to relieve it of any appearance of trenching on the province of the surgical text-book, and yet conveying to the student hints and knowledge he might search for in vain in the latter.

Fourthly, its value in the dissecting-room, full and complete, even in the most minute particulars.

In this new edition, we notice one or two corrections, and such a careful revision of the text, and addition, both to the matter and illustrations, as to bring the volume fully up with the recent improvements in surgery.

Editorial.

POSTPONEMENT OF THE ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY.—In accordance with the instructions of the State Medical Society at its last meeting, the Secretary issued the usual notice for the Annual Meeting to be held in Jacksonville, on the first Tuesday in May next. Soon after the issuing of that notice, the Committee of Arrangements of the American Medical Association notified a postponement of the meeting of that Association until June, 1863. On examination of the records, it was found that the President, one Vice-President, Chairmen of most of the Committees, and a large proportion of the active members, were engaged as Brigade and Regimental Surgeons, on active duty with different divisions of the army; while the large number wounded in the recent battles at Fort Donelson and Pittsburg Landing, had called many more from their homes, temporarily, as volunteer surgeons. Under these circumstances, the Chicago Medical Society, at a recent meeting advised a postponement of the Annual meeting of the State Society for another year. Not willing to act on this advice alone, the Secretary addressed letters to the Committee of Arrangements, at Jacksonville, and to eight or ten active members of the Society in different parts of the State. And though no answers have yet been received from several of those addressed, enough has been learned to make it quite certain that a meeting could not be held the present spring, with any prospect of success or profit. Two of the Committee of Arrangements at Jacksonville, are among the absentees with the army, in such positions that they cannot attend any meeting of the Society, or participate in any arrangement for the entertainment of its members. With these facts, and the recommendation of the remaining members of the Committee of Arrangements, we feel authorized to state that no meeting of this

State Medical Society will be held the present year. Official notice to this effect will be issued to all whose names are on the list of members, in a few days. While we regret the interruption of the regular meetings of our State Society, we certainly admire the *patriotism*, self-sacrifice, and love of country, manifested by so large a proportion of its members.

METROPOLITAN HEALTH BILL OF NEW YORK.—For several years the Medical Profession of New York City and State, have been endeavoring to procure the passage of such laws regulating the Sanitary affairs of the city and harbor of New York, as would greatly lessen not only the annual mortality of that city, but would also lessen the danger of having infectious and contagious diseases passed directly through it to all parts of the country. There is scarcely a town between New York city and the Rocky Mountains, that is not interested in the sanitary regulations of that city and harbor. It being the great receiving reservoir of immigration and commerce, unless efficient sanitary laws are enacted and faithfully enforced, every infectious or contagious disease, either engendered in its own dense population or imported with the tide of foreign immigration, is liable to be distributed to every interior point holding either social or commercial intercourse with that city. We have repeatedly had cases of ship-fever, brought from immigrant ships directly through New York city over the whole length of Railway to Chicago, and have treated cases both in private practice and in the Mercy Hospital here, in which the forming stage of the fever was well marked before they left the ship in the harbor of New York. Small-pox is another disease that is frequently brought from New York, both by immigrants and merchants, to the interior towns and cities. Many years ago when we lived in a flourishing town in the interior of New York State, its trade and commerce was almost completely interrupted the greater part of one summer by the importation of a case of small-pox into it from New York city. It is hardly possible to estimate the importance to the whole country, of well devised and efficiently exe-

cuted sanitary laws for New York city. Since a very early part of the present session of the New York Legislature, a Health Bill for that city, which we are informed has been carefully devised by the most enlightened members of the medical profession of New York, has been urged upon the attention of that body. But as on all similar occasions in previous Legislatures, the infernal desire to make every act of legislation subservient to some political or partisan purpose, is likely either to defeat the measure or so amend it as to destroy its most valuable features. How long will the American people continue to permit their public servants, whether in New York or Illinois—whether in Washington or Albany, to sacrifice human life, human health, and every other interest worthy of preservation on the altar of partisan politics and personal ambition? A legislative body which should assemble in any part of our country, and devote itself for six weeks exclusively to the work of making honest and necessary laws for the improvement of Society and the enforcement of impartial justice, and adjourn without meddling with anything outside of their legitimate business, would be a greater curiosity than the indefatigable BARNUM ever dreamed of.

RESERVE CORPS OF ARMY SURGEONS.—We see that in New York and some other States, the authorities have organized a corps of Volunteer Surgeons to be in readiness to enter upon active duty, temporarily, whenever a severe battle, like that of Pittsburg Landing or Fort Donelson, shall render aid to the regular army surgeons necessary. This is an excellent arrangement, and should be effected in this State. There are doubtless fifteen or twenty experienced and skillful surgeons in the State who would cheerfully offer their services as a volunteer corps, and hold themselves in readiness to meet any emergency, that might occur during the progress of the war. Such an arrangement would, not only, secure the services of the most competent physicians and surgeons whenever they were needed, but it would enable the proper authorities to know, at all times, precisely where, and to whom they could apply for help.

PERSONAL.—Our colleague, Dr. E. ANDREWS, professor of Surgery, in the Medical Department of Lind University, had accepted the post of Surgeon to Col. J. D. WEBSTER's Regiment of Illinois Artillery, and left for the division of the army under Gen. GRANT, just in time to make his untiring energy and skill, available in aid of the many wounded in the great battle at Pittsburg Landing. None more faithful, skillful, and humane, could be found in this or any other State.

THE LONDON LANCET.—The March number of this long established, and valuable embodiment of English medical opinion and practice, has been promptly received from the publishers. It is, as usual, filled with useful lectures and valuable practical matter, gathered from the numerous Schools, Societies, and Hospitals of London.

OBITUARY.—Died, on the morning of the 5th inst., E. B. ROCKWELL, M. D., of this city, aged 34 years. Dr. ROCKWELL has been a resident of the city and a teacher in Bell, Bryant & Stratton's Commercial College for several years. Three or four years since he commenced the study of medicine, and pursued it with diligence, as a member of the class in the Medical Department of Lind University. At the close of the last lecture term, only one month before his death, he graduated with credit to himself and the University. He was immediately employed as an assistant physician at Camp Douglas, and placed in charge of two hospital wards filled with the rebel prisoners, then, just received from Fort Donelson. After faithfully and skillfully discharging his duty to the sick prisoners for several weeks, during which he was much exposed to cold and wet, he was attacked severely, with pneumonia, chiefly limited to the middle and lower lobes of the left lung. From this he recovered in a few days, but imprudently exposed himself, both to cold and too much exercise, by re-visiting the camp and transacting some business about the streets of the city. He was again violently attacked with pleuro-pneumonia, which soon became complicated with

an exhausting typhoid diarrhœa, and terminated fatally on the ninth day. Dr. ROCKWELL, was not only an excellent student, and skillful physician, but a highly esteemed citizen, an affectionate husband, and a most exemplary Christian. The place he held in the affections of the faculty and class of the medical department of the University, is truthfully indicated by the following resolutions, viz:

“RESOLUTIONS OF RESPECT.

At a meeting of the students of the medical department of the Lind University, held April 5th, the following resolutions were framed and adopted:

WHEREAS, An all wise Providence has in His wisdom removed from earthly labors, to heavenly joys, our friend and late fellow student in College, Dr. E. B. ROCKWELL, in the vigor of his manhood, and at the opening of a professional life full of promises of usefulness and honor, fills our hearts with the most profound sorrow.

Resolved, That we, his fellow students and companions, bow in meek submission to the mysterious doings of the Lord, in this bereavement; and, as a slight testimonial of our appreciation of his many virtues, will endeavor to imitate his worthy example.

Resolved, That in his decease, society has lost a worthy member; the church one of its brightest lights, as a christian; our profession, a noble, working brother; his family a beloved and loving husband and father; the world a true man.

Resolved, That we will cherish sacredly his memory, never forgetting his motto by which he was ever guided in action, “Nearer, my God, to Thee—nearer to Thee!”

Resolved, That his bereaved widow and friends have our heartfelt sympathy; and did we dare intrude on the sanctity of their sorrow, we should gladly approach them in this their time of sore affliction, and offer consolation, mingling our sympathizing tears of deep, inconsolable grief.

Resolved, That the family be furnished with a copy of these resolutions, and our city papers be requested to publish them.

JOHN QUIRK, President.

ALIQUE C. MATCHETT, Secretary.”

PARALYSIS.—The following, on the subject of Paralysis, as a sequel to diptheria, is taken from the *Boston Medical and Surgical Journal*. The subject is one of interest, and though

we have not observed it in so large a proportion of cases as stated by Dr. ROGER, yet it is sufficiently frequent to demand attention. In the treatment of this form of paralysis, we have found nothing more promptly beneficial than a combination of strychnine and citrate of iron, in doses suited to the age of the patient.—*Ed. of Examiner.*

“PARALYSIS FOLLOWING DIPHTHERIA.—The paralysis of diphtheria seems as yet to have attracted but little notice in this country, at least little has been published concerning it. Even in Europe but slight mention has been made of it in the various treatises on this disease which have been given to the world, although cases have appeared from time to time in the medical journals, so that the medical mind has become tolerably familiar with this sequela of a disease which, with the exception, perhaps, of Asiatic cholera, has engaged the thoughts of the profession and excited the apprehensions of the community of late years more than any other. M. Maingault has recently published in Paris what is said to be the first complete account of diphtheritic paralysis, in a pamphlet of 161 pages. We have not seen the work, but from the notice of it in the *British and Foreign Medico-Chirurgical Review* we take the following extract:—

‘The outline which M. Maingault has sketched of the disease coincides entirely with its characters as they have presented themselves in this country. Thus, he has observed that the accession of the first symptoms usually takes place two or three weeks after the cessation of the primary local disease and the complete establishment of convalescence. In those cases in which the affection is about to attain its full development, the patient, instead of recovering his strength, begins gradually to become weaker; he experiences formications in his extremities, usually first in the feet and legs, attended with or followed by varying degrees of numbness and insensibility, and gradually becomes unable to walk. As the paralysis attacks the upper limbs, and the disease progresses, vision is impaired or lost, the articulation becomes indistinct, and the voice nasal and weak; the constitutional state being marked by the absence of pyrexia, the feebleness of the pulse, the palor of the countenance, and the general characters of anæmia. There is often complete anorexia, but occasionally the appetite is preserved. The duration of this condition is various, it usually diminishes gradually, the occasionally fatal result being dependent either on gradual prostration or sudden asphyxia.’

M. H. Roger, in a paper read to the Hospital Medical Society in Paris, has discussed the same subject, to determine the frequency of the occurrence of these symptoms, and whether they are peculiar to pure, idiopathic diphtheria. His observations were made on all the cases of this disease which were under treatment in the Children's Hospital during the year 1861. These were in number 210; and after deducting some doubtful cases, it was found that these symptoms occurred in 31 cases, or about one sixth of the whole number. Considering the fact that a certain proportion of the cases left the hospital before the disease had fully run its course, and others were prematurely cut off before the full development of all the symptoms likely to occur in grave cases M. Roger thinks he is warranted in concluding that the ratio should be estimated as high as one fourth, or even one third, instead of one sixth. The paralytic symptoms showed themselves most frequently in children from 4 to 6 years of age, and in 21 females to 17 males.

The symptoms appeared, for the most part, first in the pharynx and velum palati, as was shown by the nasal character of the voice or the dysphagia. Often—four times in ten—it reached the lower extremities or became general, appearing first in the lower limbs and then in the upper in four cases out of ten. The same symptoms may appear in the course of cutaneous diphtherite, without any throat affection.

Paralysis of the rectum and bladder was twice observed, once independently of any other paralysis, and once as a part of a general affection. Amaurosis was noticed once, without any evidence of albuminuria.

Paralytic symptoms appeared ordinarily from the fourth to the eighth day; sometimes dysphagia was observed from the first; this symptom, however, we should hardly regard as conclusive evidence of paralysis, especially in such young subjects. In other cases the symptoms manifested themselves at a very advanced stage. The mean duration of the paralysis was one month, subject, however, to the chance of prolongation and aggravation by intercurrent affections. The treatment recommended by M. Roger is the same as that of previous observers, namely, tonics, iron, sulphur and electricity. We have seen no statement by M. Roger of the proportion of recoveries to deaths, but the experience of other observers justifies the most confident favorable prognosis even when the symptoms are of a very grave character. We have gathered the above facts of M. Roger's observations from the *Gazette des Hopitaux*."

CHARCOAL VENTILATORS FOR SEWERS.—A rather important Report on the results of applying Charcoal to the Sewer Ventilators, in order to deodorize the fumes arising from them, has been made to the city of London Commissioners of Sewers by Dr. Letheby and Mr. Haywood. We need not tell our readers that there are miles of sewers under the London streets, and that the vapors arising from their decomposing contents, aggravated in too many cases by the bad condition of the sewers, which allows stagnation and decay, must be permitted to escape into the open air. Otherwise they would pass into private houses even more pertinaciously than they do at present, and would suffocate the unhappy sewer-man. The ventilating apertures permitting the escape of these gases are very numerous, and in some situations they give issue to a quantity sufficient to be a serious nuisance to the neighboring houses. They form a constant, and we fear increasing, element in that which constitutes the difference between town air and country air. The absorbing and oxidizing properties of charcoal, which has been much experimented on by Dr. Steinhof, have caused it to be tried for the purpose of destroying these gases; “for,” said Dr. Letheby three years ago, “let the gases go out of the sewers how they will, and where they will, you have but to place a small box containing a few pennyworths of charcoal in the course of the draught, and the purification of the air will be complete.” In order to test the virtues of charcoal fairly, a space of fifty-nine acres in the city of London, near the minories, was selected. It has 1700 houses, 14,000 inhabitants, the sewers have but a slight fall and are sluggish, and the streets are narrow, so that any emanations are doubly dangerous.

“The total length of sewers in the district is 25,587 feet; of which 2081 feet are pipes, and the remainder are constructed of brick, varying from 3 feet high by 2 feet wide to 5 feet high by 3 feet wide, internal dimensions.”

Air filters, consisting each of a set of six trays filled with $6\frac{1}{2}$ lbs. of wood charcoal broken into pieces the size of a filbert, were affixed to each of the ventilators on July 14, 1860, and have been in operation ever since with results which the reporter describes thus:—

“First. The deodorizing power of the charcoal has been satisfactorily proved to be complete. Not only have there been no complaints from the public of stench from the ventilating gratings, but we have ascertained by actual observation that the odor of the sewer gases is not perceptible when they have traversed the charcoal.” The charcoal employed

is proved to contain abundance of alkaline nitrate, and peculiar alkaline salts and volatile bodies which may be described as the essence of stench. Secondly, the duration of the powers of the charcoal is uncertain, but if exposed to wet it requires to be changed frequently. Thirdly, and this is a point we desire to call attention to, it is evident that these charcoal fibres may hinder the escape of effluvia, not by deodorizing the currents of air which pass through them, but by hindering those currents from ascending; and in this case, although they may remedy one nuisance, and the charcoal may absorb some ill-smelling bodies, yet they really do not really answer the purpose of ventilation. And the reporters show that they have been unable to detect "any perceptible currents of air through the ventilators filled up with charcoal sieves. They allow of diffusion, but cannot be proved to allow of currents. There is no evidence that the air within the sewers was worse than before, or that the ventilators caused more sewer gas to enter private dwellings, but *there is evidence that these air filters act as ventilators*. Fourthly, the cost. The prime cost of the 104 ventilators fitted up within the aforesaid district was £918 18s. 5d., with a further annual charge of £131 5s. 4d., or £1 5s. 3d. each, for repairs and management. Considering the thousands of ventilating shafts in London, the expense becomes a very serious matter. Would it not be better to expend the money in improved construction, so as to hurry on the sewer stream, and diminish the evolution of gases, and to avoid these most expensive palliatives, for such they are?—*Lancet*.

ACONITE AND NUX VOMICA ANTIDOTAL TO EACH OTHER.—In the case of a negro boy who had swallowed a destructive dose of the tincture of aconite and was rapidly sinking in spite of emetics and external irritants, Dr. D. D. Hanson administered three drops of the tincture of nux vomica. In a few minutes the heart's impulse returned with accelerated vigor, and the respirations were correspondingly improved in steadiness and depth. After a repeated dose, twenty minutes later, vigorous emesis followed the tickling of the fauces with a feather. The next morning the patient was fully recovered. Dr. Woakes instituted during the last year a series of experiments with a view of ascertaining the applicability of aconite in strychnia-poisoning, from which he draws the following conclusions:—

1. In cases of poisoning by strychnia, it is the violence of the spasms which is the chief source of danger, the patient

usually dying from the immediate effect of these, rather than from the exhaustion consequent upon the attack. It is the peculiar action of aconite to diminish the intensity, as well as to shorten the duration of these spasmodic contractions.

2. The influence of aconite in this respect is very transitory, requiring the dose to be cautiously repeated, according to the urgency of the symptoms.

3. Nevertheless, we are not to regard strychnia and aconite in the light of bane and antidote, as the only antagonism between them in a physiological, and not a chemical one, the contractile power of the muscles being strongly excited by the one, and powerfully relaxed by the other.

4. From this fact alone, it is probably impossible so to adjust the dose of each drug that both may be administered simultaneously, and the balance of the system remain undisturbed.

5. While the antagonism above alluded to is taking place, if the system be properly supported by stimulants, etc., strychnia will be gradually eliminated from it, and so the cure completed.

It remains to test the accuracy of these conclusions by observations in the human subject."

ASTHMA.—It would appear that a lady, a pupil at the Maternity of Paris, has just discovered a remedy for asthma. It consists in painting the chest with iodine pigment, and kneading the thorax in a peculiar manner. The remedy was tried in the Hospital of Tours, with the consent of the physicians, and found efficacious.—*London Lancet*.

THE BLANE MEDALS.—Two gold medals, founded by the late Sir Gilbert Blane, have just been awarded to Christopher Knox Ord, M. D., of H. M's ship *Hermes*, and to Mr. William Macleod, of H. M's ship *Madagascar*.—*Ibid*.

DESIRE FOR INFORMATION IN SPAIN.—Dr. Francis Medina, chief physician of the Spanish Navy, has just been entrusted by the government of his country, with a very important mission. He is to undertake a series of travels to ascertain the sanitary state of the principle civilized countries.—*Ibid*.

PHYSICIANS AND SURGEONS.—Up to the present time, the physicians and surgeons of the General Hospital of Lisbon were higher in rank than the surgeons attached to the same institution. By a recent decree, this state of things has ceased to exist, and a footing of equality is now the rule.—*Ibid*.

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ARTICLE XIII.

UPON THE PATHOLOGY OF MILKSICKNESS.

A THESIS, BY GEO. WHEELER JONES,

FOR THE DEGREE OF DOCTOR IN MEDICINE. MEDICAL DEPARTMENT
OF LIND UNIVERSITY. SESSION 1861-2.

GENTLEMEN:—Had it fallen to my lot to write this article but a comparatively short time since, I should certainly have apologized for so doing, as the disease of which I treat was then unclassified, and by some pronounced unknown. It has always been considered a wonderful mystery by the laity, and the opprobria medicinæ of the Western physician; and will continue to be so, until the profession advances to the examination with unbiased minds, and spirits willing to examine the case in all its bearings, and give to *truth* and *facts* their full value. Such has been my effort; and having for several years resided in a "Milksick region"; having had the subject often brought before my mind, I have endeavored to divest it of its shadows, its ogres, and its phantasms—to draw it into the clear light of science, and there analyze it carefully, with reason as my assistant and guide. And here, standing in the outer court of the Æsculapium, with an eager desire to penetrate its "holy of holies," I tender, as my sesame, the result of my thoughts and observations upon this strange disorder, hoping the doors may unfold, and I be received a worthy follower of Chiron's ghost.

The early history of "Milksickness" is involved in much obscurity. I have been unable to find any account of the disease previous to the writings of Dr. DRAKE, and his contemporaries. It—the disease—is found in a "belt of country comprising Ohio, Indiana, and Illinois," and extending into Kentucky and Tennessee. There are also spots in Alabama where it is said to exist. I believe it is unknown West of the Mississippi, North of the great Lakes, and East of the Alleghany range. To Dr. DRAKE is due the honor of having first brought this subject fully before the profession; and although many years have passed since then, its pathology is still, to the mass of the profession, involved in deepest darkness and doubt. Why this is so, may readily be seen, if one will take the trouble to peruse the mass of literature perpetrated on its account. Views as different as light from darkness; weighty conclusions from equally weighty arguments; facts and truths distorted and disfigured until their farther recognition is impossible; strange ideas and wonderful discoveries, all have been inflicted upon a patient, loving, and attentive profession, "until forbearance ceases to be a virtue," and here to the brimmer I will add one more drop.

During the early writings of DRAKE, those who recognized the complaint were divided into two principle factions as to its primary cause; DRAKE and his followers maintaining it was vegetable; his opponents, that it was mineral. The former strongly suspecting the *rhus toxicodendron*; the latter, arsenic, cobalt, and sulphur. Since then, these two have been divided into four theories, viz.: vegetable, mineral, animal, and malarial. The advocates of the vegetable cause have each found a plant, which he is certain is *the* one. Amongst those suspected are the *eupatorium ageratoides*, (white snake root,) *bignona capreolata*, (catalpa,) *rhus tox.* (poison oak,) *rh. radicans*, (poison vine,) *apocynum cannabinum*, (Indian hemp,) and a vegetable fungus, christened by Prof. SLACK, who claims its discovery, *ergodeleteria*; the last of which was recently largely experimented upon by Dr. NAGLE, a Southerner, who contributed a valuable paper upon the disease in question to the *Nashville Journal*, wherein he ably advocated the claims of the fungi, and

supported his views by arguments and conclusions drawn from actual experiment,—which is more than others can maintain. There has also an article recently appeared, in which the claims of *cicuta virosa* (water hemlock,) are advocated. But there is *no* vegetable, amongst the many named, which has been able to bear the scrutiny of extended examination; not one but that is found growing largely in regions entirely freed from the curse of our disease,—very few but of which cattle may and do eat with impunity. And with such strong negative proof against this theory, I do not think we are justified in upholding it, as it really prevents a calm and careful examination of other views. The same too may be said of the mineral cause; no one of this class of substances, with which we are acquainted, affects the system as does the subtile poison of *Milksickness*. In the mining regions of Bohemia and Saxony, where cobalt and arsenic occur in great abundance, the disease is unknown; in the sulphurous atmosphere of Solfatara, Sicily, and the Roman States, no *Milksickness* is found; in the iron producing countries of the globe, no such complaint is known; in short, no mineral can be found which produces a like disorder. The animal theory is most unworthy of them all, for it does not go even to the surface of the subject. If the complaint is caused by eating animal food, what gave it to the animal? It is not a secondary cause for which we seek, that we know well enough; it is the great primary cause which now occupies the mind.

“Can it be of malarial or miasmatic origin?” I not only think it can, but that it is; and will try to advance a few reasons for my belief. I conceive the cause of this disease to be a peculiar miasm, generated under peculiar circumstances. It may be an animal sporule; a vegetable atmospheric fungus; or a gas formed by a particular combination of the elements; that it is one of these three I am confident; but which one, is at present beyond the power of man to determine; although our evidence leans most powerfully toward the first two. We generally, I may say invariably, find *Milksickness* in or near a notoriously miasmatic district. Northeast of the place in which I reside, the country is low, wet, and might almost be called

marshy. North and Southeast it is high and rolling, but very much cut up by transient water courses. The land in all these places is covered with a thick growth of forest trees and underbrush; and in all these spots we have much malarious fevers; and the latter, I am confident, will be found to be the case in all Milksiek regions.

During the last fall, 1861, this complaint has been quite marked in that and adjoining counties. The weather was such as we usually have at that season, and such as will generally give rise to miasmatic disorders, with which we had the Milksickness complicated; its most common accompaniment this season was remittent fever. I do not wish it understood here that I advocate the theory that Milksickness is a grade of intermittent or congestive fever; but this I do maintain, that the causes which generate common miasm, will, under certain peculiar circumstances, be totally and thoroughly changed in their combination, producing another substance which will in turn give rise to a totally distinct disease from the one previously rife. How often do we see this in other complaints? Variola and scarlatina will rage in the same district. Yellow fever and cholera will stalk throughout the land side by side,—and as each finds a being peculiarly predisposed to its own special action, on him will fall the blow. Still no one will say that these are each produced by the same cause, nor that they are different grades of the same disease. Each may be caused by an atmospheric fungus, an animal sporule, or a gaseous vapor; but these causes are generated under different conditions of nature's laws, and each produces its own distinct legitimate effects, and these effects are only seen where the conditions of the organic changes in air and earth are such as to favor the propagation of their cause; and where the changes are such as occur in many districts of the West and South, there we see produced the peculiar disease known as Milksickness; while in the neighborhood, nay in the same family, we see the usual fevers of malaria. I give the preference to the animal or vegetable nature of this cause, from the fact that the disease is a self-propagating one, and to some degree contagious, which

strongly indicates a cause which will and does generate itself from itself; and we can hardly imagine such a case, without calling to our assistance those laws of nature which are intimately associated with the mysteries of organic life, and there the fact, that it is and must be a microscopic animal, a microscopic fungus, or an organic cell germ, breaks forcibly through the mind, and sheds upon the gloom-shrouded spirit a beam of hope-inspiring light, guiding our steps nearer and nearer to the great truth, which, God grant, we may all soon reach.

I have said this disease is contagious; for the proof of which I give the following facts, viz.: In perhaps seven-eighths of the cases which occur in man, the disease can be clearly traced to the eating of the flesh, milk, or butter of an animal which has died of or is sick with the complaint; and in all such cases the same disease is produced, which plainly shows its power of self-propagation; were such not the case, the disease which would *generally* be produced, were any caused at all, by consuming the diseased and unwholesome food, would be a grade of typhoid, typhus, or scrofula; but where it is *invariably* the same disorder with which the animal furnishing the food is afflicted, can we come to any other conclusion than that the disease is of a contagious nature? And what is true of its effects upon man, are the same in regard to the carnivora; as dogs, cats, buzzards, &c.

Again, human beings have been known to contract the complaint in its worst form, after having been engaged in flaying the diseased and dead but yet warm animal, and after having abstained entirely from the use of food by which it could be contracted. The same might be said of animals; but as the proof that they have not eaten the meat can not be conclusive, it would not be a fair example. With such a fact before us, and the vouchers are satisfactory, can we deny that the cause consists of a peculiar germ, which taken into the system, either through the lungs or stomach, there propagates itself until the whole being is contaminated; and without prompt assistance, the poor sufferer quickly glides down the hill of life, and sinks into the dark abyss of eternity. That the cause is of short life is also true; since before it can rise to the height at which man usually

breathes, or ere it can travel to a sufficient distance from its origin to reach the system of man, its pernicious influence is destroyed, and its germs dying before they can find a fit place for propagation, are thus rendered inert. That man has taken the disease from the atmosphere is a fact too strongly verified to be disputed, still such cases are not common; but the human race generally receive the disease from a secondary source—the bodies of the diseased animals; which animals, from their mode of life and manner of procuring sustenance, bring their organs of respiration in immediate contact with the live germs of the disease, and with every inspiration of life incorporate with their systems the seeds of death, which, finding a congenial home in their new abode, rapidly accumulate, and weave around their victim the web of disease and death.

I hope, Gentlemen, I have clearly expressed my views as to the cause of this complaint; and will now turn to its nature and anatomical characteristics. What we know of the latter amounts to very little, and gives but a scanty assistance in our search for its first cause. Several post mortem examinations have been made; but little of importance or interest has been discovered. The chief changes were in the stomach, which has generally been found somewhat injected and contracted, especially at the pyloric extremity; which in many instances was permanently and almost totally closed. The lower portion of the intestines have also, generally, an abnormal redness; which may be accounted for by the irritation of the hardened fœces. The injection of the stomach and upper bowels is undoubtedly caused by the violent retching which accompanies the complaint. The contents of the bowels are in a hardened condition, almost entirely devoid of moisture. There is also “an almost complete absence of gas.” In animals, the partly digested food in the stomach is formed in “round hard balls” of various sizes, “and the fœces in the large bowels are so dry as that they readily crumble into powder upon the application of slight force.” There are also the usual appearances of lesions, and inflammation in the various organs, when these have occurred during the course of the disease. The great difficulties in the way of

procuring post mortems, in the sections of country where the disease occurs, the insurmountable prejudice which the people show against such a proceeding, has rendered it difficult and almost impossible to advance our knowledge in this respect. Still, what has been done goes a great way, and is ample evidence of the non-local nature of the complaint. That it is a disease *sui generis*, I cannot conceive how one acquainted with the disorder, can deny. Its symptoms, its course, and its characteristics all proclaim it a disease in its self. By a great majority of those who are acquainted with its symptoms and course, from practical observation, it is regarded as a disease of the blood; for, as Dr. BYFORD aptly remarks, "Is there any disease but a blood disease that emits a peculiar odor?" And this odor, of which I shall speak again, is one of the principal characteristics of the complaint—having been once perceived is never confounded with any other—many practitioners indeed relying upon it as their great diagnostic sign. I can easily conceive how the blood may become poisoned, degraded, and perverted in its properties—how in this condition, by its pernicious influence upon the great centre of life, it spreads a destroying influence upon all the functions of body, the nervous, the secretory, and muscular in chief. And our knowledge of its course supports this view; but the elementary properties are much perverted, if not decidedly diminished; the brain is disordered in almost all grades of action, from simple irregularities to profound coma; the secretory function in all parts of the system is arrested; the spinal cord is affected as betokened by the persevering backache; the muscles are weakened, and the whole animal economy degraded in its various offices; every thing tends to prove the action of a powerful sedative influence upon the system, which influence springs from the demoralized and degraded condition of the blood,—the great source, in health, of life and activity in all the organs. Some may ask, at this point, why then is the action of the stomach so greatly increased? I would ask in return, is the exhibition which this organ displays of its powers a natural action? Most assuredly not. Its natural action is the secretion of the gastric juice, a peculiar mucus,

and that function known as absorption. The gastric follicles are dormant in this affection, while the mucous secretion is more abundant, evidently for the purpose of protecting the organ from the effects of the acrid matter, which most probably finds its way there by exmotic action, although it may indeed be produced by a perverted action of the gastric glands; so may the other matter, which I call mucus; but it is generally considered a true mucus formed by the mucous follicles. Can we come to any other conclusion, with this knowledge, than that the blood is deeply poisoned, and in its continued action is carrying destruction to all the body? While nature, becoming aroused to her danger, puts forth her powers to eliminate the cause of death; but the usual portals of excretion are closed, and her unaided efforts are powerless to force the passage; and now, as danger comes nearer, she turns as a last resort to the stomach, perverts its action, drives through its walls the seeds of destruction, which, by their unwonted presence, cause it to call for muscular power to expel the intruding substance,—the weakened nerves, by a mighty effort, respond to the call, arousing the proper muscles for the labor on hand, and boldly undertake its performance; but, in the great majority of cases, too late to effect its end; and unless assistance from the external world is obtained, nature sinks in despair, and death conquers his victim. But I must hasten in my remarks, as time and space are both limited.

In describing the symptoms and treatment, I shall adopt the plan of dividing the disease into three separate grades or varieties, viz.: simple, inflammatory, and congestive. The symptoms of the first being as follows: a strange feeling of languor, and decided aversion to all exercise, both of mind and body, mark its first onset; this is speedily followed by a want of tonieity throughout the entire system, but is specially exhibited in the stomach and voluntary muscles; there is a want of appetite, but at the same time some nausea if food is withheld beyond the usual time; torpidity of the bowels; palpitation of the heart; depressed pulse, but not much irregularity in beat; cool, pale, and shrivelled skin; stiffness of joints; trembling of limbs;

shortness of breath; craving for ardent spirits; vomiting after exertion; oppression of epigastrium; general restlessness, and at night absence of healthy slumber; "sometimes, however, the patient is dull, stupid, and indifferent to surrounding circumstances." These symptoms mark the first appearance of the disease, and may continue for days, or weeks, or months, before the complaint manifests itself in a decided manner; and where proper hygienic rules are observed, and attention paid to the general health, it often stops at this point, and the patient is restored to health without the disease advancing to its more serious grades. But if the above measures are neglected it will sooner or later take upon itself a more active form; and this change is usually preceded by some exciting cause, as fasting, long fatigue, obstinate constipation, or over-exertion. The complaint then presents the following characters: the patient is "seized suddenly with nausea, faintness, and prostration;" violent emesis quickly supervenes, accompanied with urgent thirst and longing for alcoholic drinks and iced water; the vomiting generally occurs at regular intervals, and ends with the ejection of the entire contents of the stomach, which is at first composed of whatsoever the patient may have swallowed during the interval; but as the case advances the character of the ejected matter changes, and is now composed of a "glairy tenacious mucus, very acrid and sour;" and then this mucus mixed with a dark "coffee ground matter," or this dark fluid alone; when this mixture is allowed to stand it separates into a colored solid substance, and a "collection of coagula;" the colored matter effervescing with bicarb. sodæ. In the latter stages of violent cases it closely resembles the matter of black vomit. A dirty white coat covers the tongue, which is loose and flabby; the surface of the body is cool, and is now quite full, and of a leaden color, the capillary and cutaneous vessels being in a state of engorgement; the patient is dull and stupid during the intervals of vomiting; the respiration is slow, embarrassed, and accompanied by a peculiar sighing; the pulse is full, slow, and soft; the heart throbs violently, which action is generally extended to the larger arteries, and indeed may be seen and felt in the aorta,

from the epigastrium to its division, on account of the hard and retracted condition of the abdominal walls; there is an anxious contracted countenance, excessive prostration, loathing of food, a burning sensation in the stomach, a feeling of weight and tenderness at the epigastrium, and most obstinate constipation, or where discharges occur spontaneously, they are dry, scanty, generally in hardened fetid balls, and difficult of extrusion; the secretion of the kidneys is scanty, as is also that of the other secretory organs; the patient feels dejected and despondent. And now for the great diagnostic sign of the disease: it is a peculiar odor which arises from the breath, skin, urine, and all the excretions of the body. Upon first perceiving it in the breath, one might suppose his patient was badly salivated, as it partakes much of the character of the odor from ptyalism; still there is a peculiarity about it which one acquainted with the disease will never mistake. Dr. BYFORD has most aptly and successfully hit upon the following comparison: "It resembles almost exactly a strong odor of chloroform, mingled with the smell of animal secretions; say a smell of chloroform and the breath of a patient salivated, and we would have it almost precisely." This odor proceeds principally from the mouth and lungs, and is so disgusting as to make it very disagreeable to be in the same room with the patient; and is so strong as sometimes to be perceived at some distance from the patient's room, and even from the house. Many physicians rely upon it as their almost sole diagnostic sign, and experienced practitioners will know the medicines they will use ere they enter the house. The odor may be perceived in all stages of the disease, but becomes especially marked and powerful as the complaint advances in its course. Should no relief be obtained now, the symptoms I have enumerated above gradually becomes worse; there arises a sense of emptiness in the chest, which the sufferer, with all his efforts—and they are unremitting—is unable to relieve. The efforts at emesis increase, and the matter thrown up becomes darker as the complaint advances; the surface is cold; the breathing slow and irregular; the pulse grows smaller, more rapid, and at last fails, often some hours before death; coma

gradually supervenes, and death closes the scene. In other cases, after some days from the commencement, the bowels may act spontaneously, or be moved by a cathartic, when the abdomen becomes swollen, hot, tympanitic, and painful; either watery discharges occur, streaked with blood and mucous flocci, or the passages are hard and fetid; the tongue is coated with a dark fur, and is dry, red, and cracked. Sordid teeth, congested fauces, difficult deglutition, small, quick, weak pulse, cool extremities, retained urine, and coma; the patient generally lying upon his back, with the knees drawn up; death "gradually steals upon him," being immediately preceded by those signs which mark a total prostration of the system, as from a narcotic poison. If the case ends favorably,—after having obtained a few discharges from the bowels, the vomiting becomes less frequent, the sense of burning and weight in the stomach are relieved, the nausea subsides, tongue cleans, appetite improves, and all the symptoms gradually pass away, leaving the patient to a slow convalescence, often accompanied by the promontory symptoms. Occasionally the convalescence is rapid, and good health is regained in a few days, but, unfortunately, this seldom occurs.

The foregoing is a description of the simple form. The other two varieties are both rare and dangerous, and appear as follows: The inflammatory, as might be supposed, is more fatal than the simple, less so than the congestive variety. It is marked by high arterial excitement; severe headache; the surface of the body is hot, the face flushed, and often active delirium; full, hard, quick pulse; stomach and bowels tender on pressure. It often ends in inflammation of stomach and bowels, and may be complicated with the diseases prevailing at the time in the neighborhood, which complaints often act as an exciting cause. The congestive variety is the most rare and most fatal of the three, equalling in mortality the most dangerous of the various congestive fevers of the West. It is supposed, on good authority, that the disorder commonly assumed this form in the country's early history, as Milksickness was then considered one of our most fatal diseases. After the symptoms of the

premonitory stage have continued for a longer or shorter period, a sense of impending suffocation, and intense vomiting and retching set in, accompanied by insatiable thirst, anxiety, cold extremities, small, weak, frequent pulse; glassy appearance of the eyes, abundant watery perspiration, jactitation, prostration, restlessness, suppressed urine, and delirium. These signs mark the form of the disease. Sometimes coma comes on without change of pulse, with full capillary vessels, and thus ushers the patient into the presence of death. The peculiar odor, and other characteristic symptoms, show the nature of the complaint. This variety attacks all grades of constitutions, but, excepting where the cause is intense, prefers the weak and debilitated. The diagnosis of this complaint is, to the experienced physician, comparatively easy and simple. If the peculiar odor proceeding from the patient, the obstinate constipation, dry scybalous fœces, the emesis and matter ejected, the peculiar respiration, craving for ardent spirits, and previous history of the case be properly considered, there need be no mistake in drawing a correct conclusion. And as the reputation of many a good physician has been sacrificed at the side of a Milksick patient, it would be well for one practicing in such a district to make himself as thoroughly acquainted with the disease as possible before he meets it. Our success in practice depends upon the good opinion of the *mass* of the people where we may locate, and the opinion of such a mass is changed by the slightest circumstance which points to our ignorance, though it may arise merely from hesitation or embarrassment, neither of which must be observed by our patrons.

Many diseases resemble this in *some* respects, but the peculiar characteristics enumerated above will enable us to distinguish it from all others. The prognosis varies with the variety of the disease. In the simple form it may always be favorable; the patient often recovering without much treatment, always where proper measures are resorted to. Upon the occurrence of inflammatory symptoms, more care must be exercised in expressing an opinion; we may indeed generally pronounce the case doubtful. Where the congestive form arises our prognosis

should always be favorable; for though by active and proper measures we may save the patient, the chances are as more than ten to one against us. When death occurs, in the congestive variety, it takes place in from a few hours to three days from the commencement of the attack; in the other forms, from two or three days to two weeks intervene between the attack and the close of the conflict.

The treatment is plain, simple, but active. After the stomach is quieted, the bowels moved, and secretions restored, little is to be done, aside from attention to the general health. For restoring the stomach to quietude, we must rely mainly upon blisters and sinapisms to the epigastrium, and friction with oil of turpentine on the spinal column, combined with small pellets of ice taken internally. Many practitioners have immediate recourse to opium and its preparations, but in consequence of its strong constipation tendencies, and inclination to check the secretions, I would not recommend its use, as we have other remedies quite as potent and less injurious. Some of the aromatic mixtures may be useful, especially if combined in some proportion with brandy; or brandy or whiskey alone may be used; although where other remedies will succeed it is better not to meddle with spiritous liquors, especially in the large quantities recommended by some, as many of the genus homo are possessed of comparatively short reasoning powers, and consequently conclude that whiskey saved their lives—therefore it is a “bully thing,” and having once taken hold of their affections, draws them from every other object, and finally lands the subject in the grave. The effervescing draft is a very efficacious remedy under the circumstances, and combined with sweet spirits of nitre, is perhaps excelled by no other, and in its use three indications are fulfilled at once: the stomach is calmed, diaphoresis is produced, and the kidneys aroused to action; also some effect is often induced upon the intestines. Where the vomiting still continues obstinate, and nausea is excessive, recourse may be had to creosote with every hope of success. The late Dr. TRAFTON used yeast, in this stage, with great success, and attributed to it peculiar curative powers in this com-

plaint. Where one of these remedies fails we must turn to another, until we find one to answer our purpose, which we almost certainly will amongst the many in use. But we must not wait for the gastric irritation to subside before we attempt to move the bowels, or we will certainly see our patient soon out of reach. As soon as the first attack of vomiting, after we see the case, subsides, the patient should take a small dose of calomel and jalap, say two grains of each, repeated every hour, or calomel 2 gr., ipecac $\frac{1}{4}$ gr., same way until eight or ten doses have been taken; when it may be changed for a seidlitz powder combined with one drachm sulph. magnesia, given as frequently, until an operation is produced, or the delay becomes dangerous. The calomel is useful, not only in arousing the torpid liver, but in quieting the stomach, and producing a general alterative effect upon the various secretory functions; but great care should be taken that it is not carried to excess and pyalism produced. The jalap will aid it much in its cathartic properties, and will restore the dry, irritating fœces to a fluid condition; where ipecac is used instead, in very small doses, it gives tone to the stomach, and assists much in quieting that organ, at the same time having a diaphoretic tendency. When there is an objection to the calomel at first, other cathartics may be used until the tube is opened, when one or two full doses of the submur. or pill. hy-drarg., with salts or oil at a proper interval, should certainly be given, as the liver will properly act under no other remedy, unless I except the podophyllin, which needs further trial. Cream tartar and syrup sennæ, epsom salts, or any other good purgative may be given, a full dose every hour until some effect is produced; it would be well to change from one to another, as being more agreeable to the patient, and often a combination of different remedies, or a change from one to another will produce a more speedy effect. The best time to give medicine is immediately after the ejection of the contents of the stomach; as before it can be aroused to another action, some of the medicine will be absorbed; however little that may be "every little helps," and we will finally see the good results of perseverance. Along with the remedies above proposed,

small doses of nit. potassa, or spirits nitre, may be given at intervals of one or two hours. I give this for its tendency to the skin and kidneys. But our great effort must be to obtain a downward passage through the alimentary canal, and that should be accomplished within twenty-four hours; before that time we need labor under no anxiety, unless the symptoms become much worse. As soon as we perceive a peristaltic action induced, which may be known by the improved appearance of the abdominal walls, borborygma, and feelings of the patient, and will occur in from twelve to eighteen hours, it will expedite matters much to administer an injection composed of a solution of sulph. magnesia in warm water, or castor oil floating in water; and if a strong impression is desired, a little ol. terebinthinæ may be added, but as a general thing it is too drastic, and the others answer the purpose well. The first evacuations will be dark and fetid and tarry in consistence, where injections have not been used; where they have they will be thinner, but most disgusting to sight and smell.

Where difficulty is experienced in moving the bowels, we must resort to stronger measures; and here the two great remedies are croton oil and elaterium; the former may be administered according to Dr. BACON'S plan, which is at once ingenious and effectual: a drop of oil is deposited in the centre of a large bolus of the pil. hydrarg., so large as by its weight and size to prevent its ejection; this may be repeated in an hour if no effect has been produced. The elaterium is a powerful remedy, and in small repeated doses will not disappoint our trust, although from the slight intestinal irritation it is rather contraindicated. Podophyllin is also an excellent purgative, possessing also some alterative properties, and should receive a trial. After the constipation has been overcome by a free fœcal discharge, the patient quickly improves in feelings and appearance; the nausea subsides, the skin becomes clearer, the tongue cleans, and the general functions of the system enter again upon a discharge of duty.

Now our attention must be mainly directed to the general health. In order to obviate the tendency to constipation which

remains, we must resort daily to laxatives and aperients; amongst the many are rhubarb, magnesia, aloes, etc.; a good combination is one mentioned by Dr. BYFORD, viz.: rhubarb, aloes, and capsicum, equal parts, and made into a pill. Another excellent preparation is a powder composed of one part bi-tartrate potassa, and two parts of sulphur; sulphur indeed seems to possess a very potent influence over the disease itself, acting as a decided eliminative. Should the stomach lack tone, and the appetite be poor, we may employ quinine, the chalybeates, or bitter infusions; quinia in full doses, after the disease is crushed, may be employed with advantage, and when the patient comes fully under the influence keep him there some days. By this treatment, with plain nutritious diet, the patient, in a shorter or longer time, varying from a few days to three or four weeks, becomes quite convalescent and enjoys good health; where the disease returns or continues obstinate, some vital point in the treatment has been omitted. Sometimes after the first fecal evacuations are obtained, the stomach continues irritable, the epigastrium and abdominal regions are tender, the latter tumefied, and the discharges from the bowels become frequent and watery; here we have to fear intestinal inflammation, and should endeavor to counteract it by a sinapism to the stomach, cooling mucilaginous drinks, pellets of ice, and injections which while being laxative should also be soothing and emollient. Where great debility and prostration ensue, resort must be had to stimulants, as carb. ammonia, with hot flannels, and frictions or rubefacients to the extremities; spirituous liquors may here become necessary, but as I remarked above, use them with caution, and as little as possible. Blood may be drawn if the case is inflammatory, the indications call for it, and the patient is plethoric; but as a general rule the system will not endure it, and as much strength as possible should be saved for the convalescence; veratrum viride answers the full purpose of venesection, with none of its objections, and should the stomach not be able to retain it, I should not hesitate, the febrile action being high, to administer it per anum.

In the congestive variety, our treatment must be prompt,

thorough, and active; large injections of warm water, or in very prostrate cases, water containing ol. terebinth., or brandy should be immediately thrown into the colon; at the same time sinapisms, or friction with hot oil of turpentine, should be applied to the spine and extremities; bottles of hot water, hot cloths, bricks, or irons may be used; cloths wrung out of hot water are very useful; a good and quickly prepared rubefacient is a sack or bag containing common salt and made quite hot; this may be applied to the limbs and body of the patient with great advantage; carb. ammonia, warm brandy or whiskey will be useful, per orem; where the head is warm ice should be applied to it; if the body is in the same condition, apply to it cloths wrung out of cold water, keeping the parts constantly cool, and omitting the remedies per orem as their effect may be injurious. Palliatives, such as lime water, soda water, lemonade, chalk, etc. may be used during the course of the disease, if not contraindicated, as they are generally very grateful to the patient; large draughts of cold water should be forbidden throughout the treatment, especially at the beginning, as they never fail to increase the vomiting; if there is excessive thirst, give rather the warm herb infusions, as the catnip, pennyroyal, or mint teas; or what is better still, infusion of cimicifuga rac. or wild cherry bark.

I have endeavored, gentlemen, to give as full and complete an account of this disease as "in me lies." If I have but partly succeeded in stating the *whole* case, still I must be content, hoping ere another student writes *Milksick* for his thesis, the profession will give him more solid ground upon which to work, especially in its ætiology.

LITHOTRITY PERFORMED ON KING LEOPOLD.—M. CIVIALE has lately performed lithotrity on King Leopold of Belgium. The calculus was small, and was crushed successfully in two sittings. Some time since M. C. performed the same operation for King Bomba, for which he received a fee of 25,000 dollars.

ARTICLE XIV.

RETENTION OF URINE,

CAUSED BY A CALCULUS IN THE URETHRA, WITH REMARKS AS
TO SOME OF THE MORE PROMINENT CAUSES OF VESICAL
RETENTION IN THE YOUNG.

By SWAYNE WICKERSHAM, M.D.

Read before the Chicago Medical Society.

On the 18th of October, 1861, at 5 o'clock, P.M., I was called to South Dearborn Street, to see a child two years and nine months old. I was informed that forty-eight hours previously the boy had returned from a neighbor's, where he had been playing, apparently in good health and spirits. A few minutes after entering his parents' house, he uttered loud exclamations of pain and fell prostrate upon the floor. When he was resuscitated, he expressed a most urgent desire to micturate, but unable to void any urine. He was very restless throughout the night and suffered exereuiating pain. The following morning, about seventeen hours after his first illness, a physieian was summoned, who diagnosed suppression of the urine, and believed his ease free from danger. He prescribed diureties and antiphlogisties. The medieines were administered as ordered, until I saw him about thirty-one hours later. His symptoms were then signifieant of great danger. He was semi-comatose, could only be partially aroused, and if let alone his dulness would immediately return. His respiration was stertorous. His pulse were weak and frequent, faee pale and heat diminished. His skin was heavily bedewed with a cold and clammy perspiration. His tongue was dry and brown.

His breath and the eutaneous exhalation emitted a urinous odor. He seemed to prefer to rest on his side, with the lower extremities drawn upwards. He had several serous alvine evaeuations during his illness.

No urine had been voided although his desire to do so had

been, until a few hours previously, most urgent. His abdomen was enormously distended, very much resembling an aggravated case of ascites, and the skin covering it presented that smooth, shiny appearance that is observed in that disease. The superficial veins were greatly enlarged and gorged with blood, but notwithstanding all this, I was enabled to detect a circumscribed tumor in the lower part of the abdomen, which I knew to be the bladder distended with the urine which had accumulated during the past fifty-five hours, not only from the natural secretion, but from kidneys stimulated by diuretics. Pressure upon the hypogastrium seemed to cause much pain. The perineum was tender and swollen. The tissues of the penis were tumefied and hardened, and the glans and prepuce to such a preternatural extent, as to cause phimosis. In order to ascertain if there was any urethral obstruction, I took a small instrument and when I had inserted it to the depth of half an inch from the *os urethræ*, I felt it rest against an impediment which gave the sensation characteristic of the presence of a metallic substance. The cause of the retention was now manifest. I thought it probable the boy, ignorant of the serious consequence which might result, had, while playing with his penis, as little boys are often observed to do, introduced the offending material into the urethra, a supposition that was incorrect. I had not with me forceps adapted for the removal of the calculus. I therefore endeavored to loosen it from its bed, with the small instrument already inserted. I then withdrew the instrument, and by making forward pressure along the urethra, in the rear of the location of the obstruction, and retracting the glans in a methodical manner, I soon brought into view the smallest extremity of the calculus. I then took a firm hold of the exposed portion, and maintaining the pressure to which I above alluded, although being compelled to exert considerable force, I was soon enabled to free the canal. A full stream of urine followed its removal. I did not measure the quantity, but full aware of the great power of expansibility possessed by this viscus, the amount, judging from the vigor of the stream, and the duration of the flow, would seem incredible. When the urine ceased to

pass, gentle pressure above the pubis, caused a very great additional quantity to be voided.

The tumefaction of the abdomen immediately very much abated, but the muscles remained very flaccid. The little sufferer's constitutional symptoms were not improved. The condition of the respiration and circulation made me apprehensive that dissolution would soon ensue. I ordered that he should be immersed in mustard water, after which turpentine should be applied to the spine, sinipisms to the extremities, fomentations to the abdomen, gentle pressure over the bladder every hour, and that a drachm of brandy should be given every half hour. Deglutition was almost impossible, and the boy was bordering upon complete coma. He at intervals passed a considerable amount of urine, and especially when the pressure was made as above described. It was twelve hours before his grave symptoms commenced to perceptibly abate; but after this time, his improvement was rapid, and very soon a urinous odor could no longer be detected in his breath, or in the exhalation from the cutaneous surface. His respiration and pulse were almost normal, and a brief continuation of the stimulant completed the convalescence. The calculus that accompanies this paper shows that it was formed in the bladder. There can be no doubt but that it entered the urethra when he first manifested severe illness. It descended with the smallest extremity forwards. This was the position most favorable for its transmission. It is somewhat elongated. Its longest diameter is seven-twelfths of an inch, and its greatest circumference is five-sixths of an inch. It is the largest calculus that I have known to pass the urethra of a child, and it is to me marvelous that it did so successfully.

This case illustrates to us the necessity of a correct diagnosis, especially in cases of such gravity. Vesical retention should not be confounded with suppression of the urine. It is an inexcusable error to do so. Yet there are complications where, unless a physician be upon the alert, he may commit a lamentable mistake. In a very fat individual, or one with a tympanitic abdomen, it will not answer to rely upon the touch. Percussion, in this case, will furnish a better guide, the part occu-

pied by the distended viscus will yield a less resonant sound. It is truly astonishing to what an extent the bladder will sometimes expand, before there will be a destruction of any part of its parietes. Cases are on record where it has reached the scrobiculus cordis, and frequently the fundus has been as high as the umbilicus. Cases are mentioned where sixteen pints of urine have been evacuated from the bladder of an adult, and five and six quarts are not very unusual.

MACKINTOSH mentions a case of vesical retention, where the fundus of the bladder became attached to the tissues in the vicinity of the umbilicus, and from which the urine subsequently escaped. BILLARD says he has found it in children to fill the whole cavity of the abdomen; and HOWSHIP and PARRISH have found it under such circumstances to contain twenty ounces, and the ureters to acquire a diameter of an inch or more. Much greater quantities are mentioned by others. It has been mistaken for ascites, when distended so as to occupy almost the entire abdominal space.

Such cases have been mistaken by some of our great men. Prof. GIBSON, of Philadelphia, was called to a child about two years of age, supposed to labor under ascites, and so strongly did it resemble the disease, that he at first took it to be a case of the kind, but upon learning the history of the case he was induced to examine the urethra, where he found a calculus. Upon enlarging the orifice with a lancet, the stone was instantly pushed out, and followed, to his surprise, and that of a medical attendant, by two quarts of urine. Dr. PARRISH reports a similar case. Sir EDWARD HOME relates an instance in which the celebrated Mr. HUNTER actually tapped the bladder, supposing the case to be one of abdominal dropsy.

But such cases are anomalous. Usually before it will submit to such an expansion, there will be sloughing or ulceration of some part of its parietes or that of the urethra, and the urine will escape into the tissues adjacent to the rupture. In such cases, or those complicated with ascites, in addition to other means, the introduction of a finger into the rectum, or a catheter into the bladder will be sufficiently diagnostic. When the

retention is partial and the accumulation takes place gradually, the viscus accommodates itself, to a certain extent, to the additional pressure, and great distention may occur without the patient suffering much pain; but unless discovered and relieved the same symptoms will occur as in the acute form, and the same fatal termination. I have reason to believe that this form of retention is often overlooked. In diseases attended with great prostration, where there is deficient innervation, and patients are only partially conscious, as is often observed in typhoid fever, I have known it to be disregarded. The attendants may think that sufficient urine has been voided. It may pass involuntarily, the bladder having lost to a degree its contractile power, and yet the system is being prejudicially influenced from urinary retention. I am well satisfied that the catheter is not used in these cases as frequently as it should be.

The retention of urine in new-born infants is often overlooked or carelessly regarded as suppression. The obstetrician sometimes prescribes, at his office, diuretics for such cases. The symptoms are aggravated. He now goes to see the infant, but irremediable damage has been done. I have known an instance of the kind. In such cases, the obstruction will, in most instances, be found at the neck of the bladder or in the urethra, and I believe almost always in the latter. The retention may be complete or partial. It may originate from inspissated mucus. This cause by many is regarded as very frequent. CONDIE thinks it very rare, having met with but two cases in thirty-six years' practice as an obstetrician. Perhaps a more common cause is an occlusion of the urethra by a thin membrane, situated at or near the orifices. Adhesion of the lips at the external orifice, sometimes impedes the flow. Morbid irritability at the neck, and inflammation may be enumerated as causes. Spasmodic contraction at the bulb of the urethra is sometimes assigned as a cause. I think the last three causes to be very rare in the new-born. The obstruction is seldom permanent, but almost always remediable, and requires but the medical attendant to have a correct comprehension of the difficulty.

In such cases, even though the impediment is not removed, rupture of the bladder does not seem to be very frequent, but the infant mostly perishes from paritonitis or cephalic disease. The cases of partial retention in infants are the more fruitful source of error. Congenital or induced phymosis has latterly been added to the causes of more or less permanent retention of the urine. This cause is now attracting considerable attention. Sir CHARLES BELL, Mr. GUTHRIE, and other well known writers on diseases of the urinary organs, have not alluded to it as a cause of urethral and vesical affections in the young.

Mr. PRICE recently, in a very able paper, read before the London Medical Society, stated this to be one of the most common deviations from the normal construction of the preputial and glandular portions of the penis; and stated his conviction that it was one of the most frequent causes of genito-urinary disturbance. He cited a series of cases of retention which originated from this abnormal condition, and urged that it should be promptly corrected. There are other causes of the trouble. The subject is full of interest, not only vesical but renal retention. The physician, in this as well as in many other diseases, gives too much credence to the statements of attendants, and is thus led to form, in some cases, a very erroneous and fatal diagnosis.

Cases of rupture of the bladder are reported, where the infant's sufferings were confidently attributed to other causes. Hence the necessity of a personal examination, in order that his appliances may be the correct ones. A physician cannot be free from censure, if he has the medical care of children with symptoms indicative of urinary retention, if he neglects to institute a cautious, careful, and thorough examination, that will reveal the true condition, notwithstanding the assurances of the ordinary attendants, that no difficulty need be apprehended.

My remarks have been intended to apply chiefly to the young. Not to discuss the treatment of the disease, but to glance at some of the more prominent causes of vesical retention. It would require many additional pages to discuss this subject in the full and systematic manner it deserves. There are few dis-

eases more fruitful in evil and error, and certainly merits more consideration than is usually allotted to it.

ARTICLE XV.

REPORT UPON THE SANITARY CONDITION OF THE
WEST DIVISION OF CHICAGO,
FOR THE YEAR 1860-1.

By H. WEBSTER JONES, M.D.

Read to the Chicago Medical Society, April 2, 1862.

MR. PRESIDENT AND GENTLEMEN:—As one of your Committee of Observation upon the sanitary condition of the city. I should have taken great pleasure in extending my inquiries beyond the limits of my own practice, had I possessed any earlier knowledge of my appointment, than was afforded me on Monday of the present week.

As it is, I must beg your leave to offer such brief statements and remarks upon the subject as I have been able, hurriedly, to collate from my own professional note-book, premising that my experience must not be held as a criterion upon which to base any scientific and sanitary deductions.

In fevers, I noticed a predominance of the typhoid, during the months of September, October, and November.

Most of my cases were among female children under 14 years; the disease, from its outset to the establishment of convalescence, averaging a duration of three weeks. There was in none of them any marked tendency to intestinal complication, though the gravest signs pertaining to the nervous system, were often present. As a general thing, tonics and stimulents were borne early and well. I may add, that as a remedy for continued nervous excitement and unrest, I found none equal to the cannabis indica.

I have seen few cases of intermittent or remittent fever, and those readily yielded to ordinary treatment.

Of the exanthemata, no proper epidemic has seemed to me to

prevail, at any time during the year. Of scarlet fever, however, I have heard of several cases, which might be classed as “anginose,” and even “malignant;” but they have proved sporadic, and were not communicated *in kind* to those who were exposed.

Measles have been frequent, but not severe, so far as I have observed.

Small pox has been *heard of*, only, during the year.

Of erysipelas I have seen no cases.

Rheumatism seemed to observe its due proportion, comparatively. In one of my cases, where the patient had, years before, suffered from a like inflammatory attack, I found instant relief to follow the use of guaiacum and colehicum, when the “alkaline treatment” had proved unavailing.

During the latter part of the winter, and early spring, I observed the prevalence of an unusually severe and obstinate influenza, attended with great congestion of the mucous linings of the nasal passages, frontal sinuses, and eustachian tubes.

I have seen a fair average, only, of pulmonary and pleuritic inflammations. Where, in one case of pleurisy, effusion took place, I found great benefit to result from the use of a strong iodine ointment, frequently applied, and protected by oiled silk and cotton, to promote its absorption.

In one case of pneumonia, in a child of eight years, I met with a rare pathological condition of the parts, a condition which might possibly, (unless the *physical signs* appertaining to it were carefully corrected by the *rational symptoms*,) lead one to error in diagnosis and prognosis.

Briefly, it was this:—At what might be considered the “height” of the disease, the lungs were both everywhere *dull under percussion*, except in their *subclavian regions*. There a fine crepitus was discerned; but elsewhere only bronchial respiration was audible. Within twenty-four hours after, the fine crepitus heard in the subclavian regions began to extend itself over the whole anterior surface of the lungs, which surface began also to give clearer sounds on percussion. Another day made the same facts more evident, and even posteriorly, both lungs gave the crepitus of “resolution;” but *here* the sounds

elicited by the finger were still perfectly dead; at the same time, a puffiness of the neck, on the right side, was observed, which, upon pressure, distinctly crepitated. The patient steadily sank, and died in a few hours.

The autopsy, made shortly after death, disclosed a thorough hepatization of the posterior halves of the lungs, the anterior portions being emphysematous. Air had escaped into the cellular tissues of the neck, into the mediastinum, and even lay in clustered vesicles over the surface of the pericardium. The child had been comatose for forty-eight hours preceding its decease.

The point of interest was the similarity between the ordinary signs of the resolution of pulmonary inflammation, and those given by the advancing emphysema—the sounds being heard distinctly, even behind—through the condensed and hepatized structures, though, here, percussion contradicted the supposition that air was again finding its way into its accustomed channels.

Another case of pneumonia of the left lung—occurring in a boy of seven years—and advancing to the second stage of the disease, interested me in its entire and rapid disappearance under the administration of the *veratrum viride* alone.

During the autumn, I saw several serious cases of “diphtheritic croup,” and two cases of *pure* diphtheria, which proved fatal. My impression is that the latter is a very rare disease; that it has never been as common as generally supposed; that it has not been met with so often, during the past twelve months, as in the preceding year; and that it has, so far as I can learn, when *distinctly* present, terminated fatally in by far the majority of cases.

During the summer months, I observed nothing unusual in regard to the prevalence or degree of severity of bowel complaints.

Since January last, I think I have heard of more cases of puerperal fever than has been common for many months previous.

In conclusion, I believe it conceded by all, that the past year

has been one of very general health, though the demands made upon our profession have been more steady, and less interrupted by periods of "stagnation," than for several years previous.

Army Correspondence.

PITTSBURG LANDING, TENN., *April 17, 1862.*

EDITORS MEDICAL EXAMINER :

Desirous of adding field service to my experience in military surgery, I have, as you know, accepted a position in the army. I chose the artillery in preference to infantry, or brigade service, because that arm of service is always in action, and gives the greatest variety of gunshot injuries. Accordingly, I have pitched my tent under these greenwood trees, as the surgeon of the 1st Regiment of Ill. Light Artillery, Col. Webster commanding.

Many volumes might be written on the surgery of this great battle of Pittsburg Landing, but I will only give you a cursory sketch of such points as are at present most easily ascertainable. The wounds were of every conceivable character, from a scratch of the epidermis to the knocking off the shoulders of the whole head.

I saw several exceptions to the general rule, that the modern elongated bullets keep a straight course, not turning to the right or left for any obstacle. I cut out one from the thigh, which had glanced from the femur. It was bruised out of shape, and flew in a crooked course, beneath the skin, to a distant point in the limb, while the bone was not broken. Other similar cases were occasionally to be found. I cut out several balls from beneath the scalp, which had flattened themselves to wafers against the skull, without breaking the bone. Several cases fell under my notice, in which balls barely penetrated the outer clothing and stopped, merely bruising the skin beneath.

The projectiles of the enemy were round shot, shell, cannister, grape, long bullets, round bullets, and buckshot. There seemed to me to be an unusual number of wounds from spent balls, which was explained when I saw a captured box of rebel cartridges. Many of these only contained half the usual charge of powder, apparently being thus made from motives of economy of that material. The slaughter, however, was terrible. Our wounded must number from three to five thousand. The surgeons showed commendable courage, and, indeed, seem to have exposed their lives unjustifiably, in some cases. One surgeon, whose name I cannot learn, was killed, and six or seven were wounded. Among the latter, was Dr. Frank Reilly, the junior editor of your Journal. He was shot in the leg, fracturing the fibula, while attending to the wounded of the Illinois Lead Mine Regiment, as assistant-surgeon. His wound disabled him from field service, and necessitated sending him home for recovery. Dr. Roskotten, of Peoria, was injured. His horse was shot under him, and falling on his leg, disabled him from field service. He went on board a hospital steamer, and rendered valuable service among the wounded there.

Dr. H. WARDNER, late demonstrator of anatomy, in the Medical Department of Lind University, was very active, and has furnished me the following account of his operations:—

DR. ANDREWS, *Dear Sir*:—On the 6th inst. our regiment was ordered into battle, on the extreme left of our lines, to support Col. Stuart's brigade. I followed the regiment with my hospital attendants and regimental brass band, taking with me a supply of dressings for temporary use on field. While seeking a suitable position for a field depot, I came within direct range of one of the enemy's batteries. I ordered my attendants to lie down behind a small elevation of ground, until the range might be changed, which was done in about fifteen minutes. I then, with assistant-surgeon Banc, of the 50th Illinois, established a depot in a ravine, about three hundred yards in rear of our line of battle.

At this place, *ten* of my regiment were brought to me, two mortally, and the rest badly wounded; among the latter Capt.

Swain. At this time, the balls, shells, and bullets came in such volleys over our heads, that we knew the enemy to be rapidly advancing upon the ground, and about ten minutes later, had the dissatisfaction of seeing, from an opposite bluff, our depot ground in possession of the enemy. I then moved towards the Landing, and met Dr. Hewitt, medical director, at the log building used as post office, and received an order from him to give my attention to the wounded in the tents near the steamer City of Memphis. At this place, I had amputated one arm, and had just taken the knife to operate upon another, when a rifle ball whistled over our heads, doubtless fired at the men at a battery about fifty yards in our front.

The battery then opened upon the enemy and thus drew their fire upon us. All the wounded who could crawl out of their tents were immediately seen scrambling down the river bank, some upon their haunches, others upon their bellies, and in all shapes were seeking a cover from the danger threatening them. Night soon put an end to our efforts in surgery, and taking a few of the worst cases about me, I went on board the steamer Chessman, and remained until the afternoon of Monday.

On board this boat I performed five amputations. On the morning of Tuesday, I was ordered to report to Brigade-surgeon Derby, on the steamer City of Memphis, and was by him placed in charge of the wounded on the hurricane deck. On this day, I performed five capital operations, assisted by Dr. Shirriff, and an invalid surgeon, whose name I disremember.

On Monday morning, the boat went down the river, and I rejoined my regiment, where I performed one amputation.

On Sunday the 13th, I succeeded in getting the last of our seriously wounded in hospital boats.

My regiment lost 22 killed, and 86 wounded.

The following is a table of operations, with results as far as known :—

- | | | |
|--------------|----------------------------|-------------|
| 1. Left arm, | Amputated above the elbow, | Successful. |
| 2. Right “ | “ “ “ | “ |
| 3. “ “ | “ “ “ | “ |

4.	Right leg,	Amputated,	upper third,	Successful.
5.	“ thigh,	“	middle “	“
6.	“ leg,	“	upper “	“
7.	Left thigh,	“	“ “	Fatal.
8.	Right leg,	“	“ “	Successful.
9.	“ arm,	“	“ “	“
10.	“ thigh,	“	middle “	Fatal. .
11.	“ leg,	“	upper “	Successful.

Besides the above, I performed many minor operations, as amputations of fingers, extractions of balls, &c., &c.

It may be interesting to append the following list of amputations, &c., performed by me at Fort Donelson:—

1.	Fore Arm,	Middle third.	Successful.
2.	Arm,	“ “	“
3.	Right leg,	“ “	“
4.	“ thigh,	Lower “	“
5.	Left shoulder,	At joint,	Fatal in 5 weeks.

6. Lower jaw, large portion removed leaving angle and condyles. Successful.

7. Extraction of a grape-shot.

This entered the right cheek, in front of the angle of the lower jaw, knocking out the back molars, passed into and through the pharynx, opening the trachea, (so that when the man tried to drink he was strangled,) and lodged on the left side of the neck, resting upon the brachial plexus of nerves, thus causing paralysis of the left arm. I removed the ball without the loss of more than a drachm of blood. Brigade-surgeon Brenton being in consultation.

Several surgeons have since claimed the credit of this peculiar operation.

The extraction was performed by cutting at the outer border of the mastoid muscle, pushing the external jugular vein back, and the muscle forward. The dissection was then continued with the handle of the scalpel, and the ball raised out with an elevator.

H. WARDNER, Surgeon, 12th Ill. Vols.

I saw one instance showing how an operation seems to stimu-

late and revive a sinking patient. I found a poor "seeesh" fellow on the wet ground in a tent, three days after the battle, with a minnie ball hole through, shattering and comminuting, the femur, and another similar one through the tibia. Gangrene had already set in, the pulse could hardly be felt at the wrist, and the case seemed hopeless. Giving him what attention I could at the moment, I went on to assist others, but after an hour or two I returned to him and determined to give him the chance of an amputation. Accordingly, I put him under the influence of chloroform, when the last remnant of pulse disappeared from the wrist. I, however, proceeded and amputated the thigh at the middle third. As I proceeded the pulse returned, and in an hour he was better than he had been for twenty-four hours. He was put on stimulants and the next day was still further improved. He was then sent to a hospital steamer, and I was unable to learn his fate.

The system of management here is most advantageous for the wounded; but it is unfortunate that no reliable statistics can ever result from it. The wounded are rapidly dressed on the field and some amputations, etc., there performed. The pressure of the labor, however, on the surgeon, prevents any adequate written account of all his cases, and never allows him to preserve full record of names, companies, and regiments. From the hands of the field-surgeons, the patients are taken by ambulances to hospital steamers, where any necessary additional operations and dressings are made. As the number of surgeons on board is very limited, they are taxed to the utmost, and have no time for recording their cases. As soon as the boat is filled she moves down the river to Paducah, Mound City or, other general hospitals, and discharges her suffering cargo. Here the secondary operations are performed, and here only, are any perfect records possible. The field-surgeon may remember and write down many cases, but he cannot ascertain their subsequent history. The boat-surgeon knows neither the subsequent nor previous condition; and the general hospital-surgeon knows nothing of the previous history, nor has he any account from those who have preceded him. For these rea-

sions the surgical history of this war will never be perfectly written.

The Government supplies of medicines here are very inadequate to the necessities of the case. I have not been able to get anything at all approximating to the field supply table. For a considerable time I could not procure a single article of the mercurial class, and the third day after the battle I drew the last half-pound of chloroform but one, from the purveyor. Fortunately, I obtained a new stock of the latter from the Sanitary Commission stores. I have not been able to procure any *veratrum viride*, nor a single expectorant, except *buchu*, to this day. This dearth is partly owing to losses of regimental stores in the battle.

Some of the surgeons here are, as might be expected among so many, ignorant. After the battle, I found for days numerous bullet wounds which had been carefully stuffed with lint, and the plug kept in by adhesive straps, as though the surgeon desired to retain all the discharge. Considerable difference of opinion and practice prevails respecting the question of what cases should be amputated. In the inferior extremity, some sacrifice every comminuted compound fracture of the femur or tibia, while others only amputate in cases where the nerves and vessels are also destroyed. The passage of a bullet through the thigh bone, when it comminutes it badly, produces a fearful injury, with but trivial external evidence of its grave character. Hence, not a few surgeons in the army simply omit all efficient treatment in these, being lulled into a false conservatism by the trivial appearance of the bullet hole. But the internal condition is this:—the shattered and comminuted fragments of bone occupy a considerable space in the centre of the limb, creating in the surrounding tissues mortification of some portions, and intense inflammation of others. Meanwhile the orifices of the entry and exit of the ball, originally quite small, contract and prevent the free escape of pus, bone, and dead flesh from within. The result is, that the pus burrows among the muscles, the limb swells, the patient is worn out by suffering first, and discharge afterwards, and very generally dies. Still the mortality

after military amputations of the thigh is so fearful that one may well stagger, being 84 per cent. at the upper third, and over 50 per cent. any where in the lower two-thirds. On the whole my experience and the careful comparison of authorities, has brought me to adopt the following rule: For gun-shot wounds through the knee or ankle joint, amputate or resect; for those of the leg and thigh which destroy the principal arteries and nerves, and at the same time shatter the bone, amputate in all cases; for those which simply fracture the femur, without much comminuting it, do not amputate; for those which are supposed to have comminuted the femur badly, without injury to the nerves and large vessels, I give the patient chloroform, and with the finger, explore the wound, thoroughly, if the bone is badly shattered, enlarge the wound to the extent of several inches and take out, at once, every loose piece of bone, and if necessary, resect the ragged extremities of the shaft; I then take pains to keep the wound well open and bide the result; by this method the terrible inflammation and burrowing of pus in the centre of the limb is prevented, a comparatively simple form of injury is produced, and the awful risks of the femoral amputation avoided; if, however, the case required transportation for days, in wagons, before any rest in a hospital could be obtained, I should certainly amputate.

I am sorry to say that I see some surgeons recklessly cutting off arms, which might as well be saved, when the same men slur over fractured thighs and perforated knee joints as though they were less serious injuries.

PITTSBURG LANDING, TENN., *April 24, 1862.*

DEAR DR.—I received a letter, a few days since, from my brother, in which he says that you say “write to me.” I have. But I saw Prof. Andrews, one or two days since, and he said, “write to the Dr. giving him incidents of the battle,” &c. I will begin by giving your a letter, the original of which is in my

possession, word for word and letter for letter, except in the one item of names:—

“CAPTAIN ———, Ser, I have examined Mr Josuf ———, and find him unable to go into Survis at the presant time from debility of liver and disease which causes a ginerl debility of the hole sistem and I think he will not be able to go into Survis under 19 or 20 days. November the 23d 1861

Dr T. M. —————

In the presents of G. T. M————— J. P.”

This I call decidedly rich; and it is not the only one of the kind I have seen either. They come to me too frequently. I presume from the “Ginerl debility of the *hole sistem*” mentioned in the letter the man must have diarrhœa; but the balance of the document borders on the mysterious.

I saw, during the recent battle, a very fine illustration of the difference in the effect of a cannon ball passing near the upper extremity or the lower. On Sunday the 6th inst. a man was brought in whose head had been very near the track of a cannon ball—which had not, however, disturbed even the hair. He was suffering very much from shock; perfectly insensible; the pupils dilated, &c.; in this condition he remained several hours. On the other hand, Capt. Anderson, of the 18th Ill. V. seeing a ball strike a horse, perhaps fifty yards in front of, and in a direct line from him, instantly leaped up from the ground, letting the ball pass under him, which it did, just touching his boot heels. He struck on his feet, however; and by stepping to one side, avoided the next one by an interval of four feet. Shock from a ball passing simply near one, without touching, is very strange. I have never seen it satisfactorily explained. I cut out a ball, which, entering the left breast, had carried in all the guard of a suspender buckle, and was found (guard and all) opposite the navel, on the right side. The man stood on his feet while I took the ball out; and he walked away very much pleased with my success in removing it. A ball struck the sleeve of a lieutenant's coat, which happened at the moment to be over the back of his hand. It was one of the large conical

balls, but carried the coat before it, and buried itself in between the metacarpal bones, where it remained so firmly impacted that I was compelled to enlarge the opening before I could remove it. The coat was not torn but completely surrounded the ball.

A very great number of interesting and instructive incidents might be gathered; and I mean to gather up as many of them as I meet, which will, in my judgment, be of permanent value, and let you have those you wish for your Journal. In the meantime, I shall remember the more striking *incidents* that come under my notice; and if I live through the war, shall visit Chicago, when I shall probably have more to relate than you will care to listen to. Truly yours,

O. B. ORMSBY,
Asst.-Surgeon, 18th Regt. Ill. Vols.

Extract from a Letter from Dr. Dumreicher.

CUMBERLAND, MD., April 18, 1862.

DEAR DOCTOR:—About six weeks ago, I was sent by Gen. Rosencrans to this place, there being a great want of surgeons, and the number of sick soldiers from the late Gen. Lander's division increasing very rapidly. I arrived here and found a great deal of work to do. 1500 patients and very limited accommodations. I worked hard for two weeks; had many cases of typhoid fever, pneumonia, typhoid pneumonia, rheumatism, &c. I succeeded better than I could expect; and was much pleased by receiving a very flattering official notice from the Med. Inspector and Med. Director of the Department. There is quite an epidemic around here of a peculiar disease of the throat,—something between diphtheria and the sore throat frequently accompanying scarlatina. It is hard to manage; and characterized by *extreme* prostration. I had such an attack myself, and was very ill. I am told that this disease has been quite fatal here. Respectfully and truly yours,

C. DUMREICHER.

Selections.

LECTURES ON NEW REMEDIES AND THEIR THERAPEUTICAL APPLICATIONS.

DELIVERED AT THE

NEW YORK MEDICAL COLLEGE AND CHARITY HOSPITAL.

By SAMUEL R. PERCY, M.D.,

Professor of Materia Medica and Therapeutics.

Reprinted from the American Medical Times.

THE ACTIVE PRINCIPLE OF COLCHICUM—COLCHICINA.

With the principle which I have prepared, and which is identical with the *colchicine* of Oberlin (and of the chemical differences between this and the *colchicin* of Geiger and Hasse I have already spoken.) I have tried some physiological experiments. To a full grown dog, weighing about twelve pounds, I administered one grain finely rubbed up with one drachm of sugar, and enveloped in a thin slice of meat: this was thrust down the throat. For about one hour no change was noticed, excepting a gradual increase in the frequency of the pulse, being at the end of the hour fifteen beats more than at the commencement. Gradually the dog began to show restlessness and pain. In two hours he had a full copious discharge from the bowels, the first portions of which were natural in appearance, but the latter portion was light colored, pultaceous, and very frothy; vomiting also commenced, which at first consisted of thin mucus but as the retching continued, the mucus thrown up was small in quantity, and freely tinged with blood. Urine was passed at first freely, and as an old dog usually passes it, but as the dog grew weaker many ineffectual attempts were made, and constant straining in the way which a young dog usually uses, without throwing up the leg; although the efforts to urinate were frequent, no urine was passed after three and a half hours. The pulse in two and a half hours was thin, wiry, and frequent. In six hours the pulse was small, feeble and reduced to twenty-four beats in the minute. In the meantime the diarrhoea had been very troublesome: the discharges were thin ochre-colored, frothy, with frequent patches of bloody mucus. After the seventh hour the dog did not attempt to rise, the pulse became small, thready, and intermittent, and he died a little be-

fore the eighth hour, without convulsions. Upon post mortem examination the heart contained much thick, pitchy-black blood, and the same also was found in the ascending and descending aorta as described by Bley, and even in the arteries of the legs and neck; the mucous membrane of the stomach was only slightly congested, but the whole mucous membrane of the small and large intestines was inflamed, even down to the anus, near which there were several large abrasions. Upon removing the kidney, and dividing it with a sharp knife, the first appearance was one reddened inflamed mass, and upon more minute examination the Malpighian bodies were very red and much congested, the interlobular plexus was also very much congested, and the congestion extended even to the infundibula and pelvis of the kidney.

Two grains were given to another dog, which died in eleven and a half hours, with all the symptoms above described. Towards the pyloric extremity of the stomach there was an irregular patch of about the size of a dollar, highly congested; the other parts of the mucous membrane were not much changed; the small and large intestines were like those in the other dog; the heart contained the same black, pitch-like blood; the kidneys were if anything more congested than those before described; the bladder was entirely empty.

To a dog, weighing about fourteen pounds, two grains of this colchicina were given finely rubbed up with a drachm of sugar, and a scruple of tannic acid. The whole was enveloped in a slice of meat, and pushed down the throat. The restlessness of the dog seemed greater than with either of the others described. There was retching in half an hour, and in about an hour free vomiting. In an hour and a half there was copious diarrhœa. Thirty grains of tannic acid were given, but it did not control the diarrhœa; there was not the same desire to urinate as shown by the other dogs, but no urine was passed after the fourth hour. The dog died in fourteen hours. The post mortem appearances were nearly the same as in those described, excepting that the kidneys were not so generally inflamed, though there was great congestion of the Malpighian bodies and interlobular plexuses, but it did not extend beyond them as in the other case; the bladder contained about a teaspoonful of very dark-colored urine. Thus tannic acid is no antidote to colchicina.

To a cat, while under the influence of chloroform, was administered one grain of colchicina, enveloped in a small round ball of bread. In little more than an hour it purged her freely, and produced very great uneasiness, as she prowled round in a rest-

less and timid way, and constantly moaned. The tenesmus with the dogs was great, but with this cat it was very severe, so long as the strength lasted she seemed to make almost one continual strain. The cat died in eight hours. There was congestion of the stomach, intestines, and lungs; the right side of the heart was empty, but the left ventricle was distended with pitch-like black blood. The kidneys presented the same appearance as in the dog I first described.

Therapeutical Applications.—To a gentleman suffering with an acute attack of gout I administered one-forty-fifth of a grain of colchicina, three different times, at intervals of four hours. It produced no effect upon the bowels, but the urine was largely increased in quantity, and contained a very large amount of urate of ammonia and mucus. I could not perceive that it produced much change in the pulse. The dose was now increased to one-thirtieth grain, which I was obliged entirely to suspend after the third dose. The pulse fell in frequency twenty-eight beats, the urine continued to flow very freely, and still contained the same large amount of urate of ammonia and mucus; the bowels were opened several times, the discharges were of an ochre color, very frothy, and had a strong urinous smell: there was some tenesmus, and an inordinate amount of flatus, which rather amused him at first, but eventually became quite painful. As I remained some time with my patient, and saw no cause for fearing too severe an action, I gave nothing but large quantities of mild diluents. I had no occasion to repeat the medicine, as it completely arrested the paroxysm. The urine that was passed before the administration of colchicina was small in quantity, of very dark color, deposited uric acid in large quantity on cooling, and was of sp. gr. 1.021. That passed after the third dose of colchicina was large in quantity, of much lighter color, containing a very large quantity of urate of ammonia and mucus, and was of sp. gr. 1.030. That passed after the bowels had been very freely acted on was still large in quantity, and contained about the same quantity of urate of ammonia and mucus, and was of sp. gr. 1.025, thus making a difference in the amount of solid matters discharged of about twenty per cent. even in the same quantity of urine passed; but as the amount passed was certainly four or five times larger, the amount of effete matters carried off in this way must have been very great.

Another case of gout coming under my notice about the same time, I gave one-thirtieth grain of colchicina, and repeated it seven times, at intervals of from four to six hours. It acted more quickly on the bowels than in the previously mentioned

case, producing the same ochre-colored, frothy, and urine-like smelling discharges, as before spoken of, and producing much flatus and some tenesmus. The increase in the quantity of urine passed was very marked; the sp. gr. increased from 1·018 to 1·024, and uric acid and mucus were deposited in large quantities. This is the only paroxysm that this gentleman has had.

There is one other person to whom I have administered the colchicina. This person was suffering from a subacute, or rather chronic, attack of gout; he had gouty conerctions of urate of soda, and enlargement of the joints. I gave him one forty-fifth grain three times a day, for ten days. It acted freely on the bowels three or four times daily, producing flatus to such an extent that he had to keep watch on himself when any one was near. The urine was increased in quantity and in specific gravity, and deposited large amounts of uric acid on cooling. He was very much benefited by the treatment. I find no other mention of the use of this agent in the treatment of disease, excepting by Dr. Guensberg, of Breslau. He has used it in many cases since 1853. Patients that had long suffered from gout, took, during the painful paroxysms of the swellings of the joints, one-sixtieth of a grain (of Geiger's) three times daily. In every case the remedy acted as an intense excitant of the intestinal secretion, even in such patients who had always before suffered from constipation. After three or four weeks' use of the colchicin, patients who before had suffered from an attack every two or three months, remained entirely free for a year or longer. But in acute articular rheumatism its employment did, contrary to his expectation, but little or no good.

Modus Operandi.—We have not a very large number of physiological experiments from which we may draw inferences as to the modus operandi of colchicina; but the few experiments that are given demonstrate its effects with greater accuracy than is usual with new remedies. We see by the physiological experiments on animals of Geiger, Albers, Hoppe, Asehoff, Bley, and Schroff, that colchicina uniformly acts as an irritant to the mucous membrane of the intestinal canal, producing frequent and copious alvine discharges; that given in the quantity of one grain or over to the smaller animals, it universally caused death, with pathological evidences of gastro-enteritis. We see, also, by the experiments of these gentlemen, that it enters the circulation and produces upon the blood the changes that a mere acrid poison does not necessarily produce. Asehoff and Bley have demonstrated its existence in the secretions. All of the experiments performed, those of my own included, demonstrate that,

although it induces vomiting, the vomiting only takes place after a considerable time, that it is first absorbed and that the vomiting is but the consequence of the gastro-intestinal irritation. Although it has been common to call colchicum an acrid narcotic, we see that it possesses no narcotic properties, that it has no special action upon the brain or spinal marrow, and that a very large increase of the dose but little increases the intensity of the symptoms, and does not hasten death. We see by the physiological experiments performed by myself, and also by the therapeutic action in the cases I have reported, that in addition to the effects above mentioned, we have an increase at first in the amount of urine discharged; but in poisonous doses the urine is soon entirely suppressed, owing to inflammation of the kidneys. This is not mentioned as one of the actions of this medicine by the gentlemen whom I have just quoted; but in the experiments I performed it will be remembered that no animal to which I administered it passed any urine after the fourth hour, and that after death none was found in the bladder. Upon examination of all the animals that I experimented upon, pathological changes, which alone were sufficient to cause death, were found in the kidneys; in two of them the whole organ was inflamed, and the congestion extended to the infundibula and pelvis. In the dog to which I administered tannin in connexion with the colchicina, the kidney was less inflamed than in the other animals, but a smaller quantity of urine was passed by this animal, and the desire to urinate was less urgent. After death the Malpighian bodies and interlobular plexuses were found highly congested. This was sufficient to prevent the elimination of any urine, and it appeared to me that the astringency of the tannin had had the effect to retard the passage of as much as usual of the poison through the kidneys. It will be seen in the cases in which I record the therapeutic action of the remedy, that the quantity of urine was largely increased, and that the effect was produced even before its action on the bowels; that in addition to the increase in quantity, there was also a very great increase in sp. gr., and that the amount of urates and mucus was very large. Guensberg, who alone in addition to myself has tried the therapeutic effects of this remedy, has only noticed that it acted as an intense excitant of the intestinal secretion; but his were chronic cases, which he probably saw but once a day; but he found that it produced absorption of the swelled joints. Schroff, who administered it by way of experiment to a person in health, states that "the urine was like whey, with abundant white sediment." It will be noted, then, that we have given several in-

stances wherein, administered in medicinal doses, colchicina increases both the quantity, specific gravity, and uric deposit of the urine. Let us turn again to the character of the feces discharged; all state it to be large in quantity, mucoid, and frothy, and when it has been particularly examined, I have stated that it has a strong urinous smell. This effect is as marked with the administration of tincture of colchicum as with colchicina; and once, some years ago, I examined the feces of a gouty person while under the influence of colchicum, and found them to contain a large amount of uric acid. It will be remembered that *Chelius*, of Heidelberg, many years ago, endeavored upon theoretical reasonings to explain that colchicum cured gout by eliminating uric acid from the blood, because he noticed that under the action of colchicum the amount of uric acid in the urine was much increased. This is disputed by those celebrated men Dr. Pereira and Dr. Graves, who not only deny that colchicum augments the excretion of uric acid, but state that it rather diminishes it when the remedy is given to its full effect. This, in my opinion, is one of the best evidences in proof of the theory of *Chelius*, for the gentlemen just named carry their observations only so far as to state that under the full effects of colchicum the amount of uric acid in the urine is decreased; here their observations cease; they make no examination of, or investigation into, the character, amount, and composition of the alvine discharges, nor have they examined the blood before and after the administration of colchicum. As I have just stated, I have in one instance proved that tincture of colchicum administered to a gouty person, to its full purgative effect, produced the elimination of a large quantity of uric acid in the feces; that the urine before the purging contained more uric acid than it did after. In other instances where it was administered in small doses, not sufficient to produce purging, the uric acid in the urine was greatly and persistently increased. In the cases which I have reported of the therapeutic action of colchicina, we find the quantity of urine increased, as well as the specific gravity, and that the urates were in great abundance. This occurred from the time of the administration of the dose until free purging was produced; then the specific gravity was less, and the quantity discharged less, but both were more than before the administration of the colchicina. *Guensberg* found colchicina reduced the gouty swellings, and for many years colchicum has been used to reduce the deposit of urate of soda, occurring about the joints. It would seem, then, to me, viewing the various effects we find produced by colchicina, that its *modus oper-*

anili consists in its removal from the system of a large amount of urates. Chelius stated this to be its effects by noticing the augmentation of uric acid in the urine only; I think I have demonstrated his observations to be correct, not only in the amount of urates, but in the increase of the specific gravity also, and also by its presence in the alvine discharges. But the excellent work of Dr. Garrod fully explains these facts. In poisonous doses it first stimulates the kidneys, then the intestines; and destroys life at last, not only from the inflammation it produces in these organs, but by its preventing any secretion of urine, and by its acrid, poisonous properties upon the blood. Could the kidneys continue their functions, it would all be eliminated, and the system would recover from the poison: but, like most acrid poisons, it inflames and paralyses the kidneys, and is thence retained in the system, changing the character of the blood. I need hardly discuss the question of its absorption. I have so frequently during the session given you demonstrable proofs, by physiological experiments, that this class of remedies is absorbed into the circulation before they produce their peculiar effects upon the system, that repetition here I deem unnecessary. Being absorbed into the system, its action is catalytic, producing some peculiar change in the character of the circulating fluid, stimulating certain of the excretory glands, and passing out of the system after it has produced its peculiar effects. Its primary effects are upon the blood, for we find, when given in too small doses to act upon the bowels, that it always stimulates the kidneys, and increases the amount of excreted metamorphosed tissue. That its action on the blood is of that peculiar character to cause a rapid elimination of this product, is proved by the increase of the urates in the urine, and by their presence in large quantities in the fæces. Its action on the bowels, then, though always hitherto spoken of as its primary action, I deem but secondary to that upon the kidneys; and when the kidneys are unable to eliminate either it, or the changed materials that it produces, the blood becomes so altered as to be unable to become arterialized, and is found in the heart and arteries after death black and pitch-like.

Uses.—From the physiological effects of *colchicina* we may ask, What are its uses? We have seen from several cases that it has given speedy relief in gout, and from the known effect of *colchicum* for many ages in that disease we have empirical as well as rational proof of its value. *Colchicina* has never been used in inflammatory rheumatism, but the testimony of thoughtful men is that *colchicum* is of no service whatever in that dis-

ease. From its physiological action we have every right to draw deductions that it will be found of great service in those diseases where uric acid and the urates are in abnormal quantities, and require to be removed from the system.

When speaking of the action of colchicum I told you that objections were raised by some against the use of it in gout, because it seemed to lose its effects in subsequent attacks. Is not this rather the nature of the disease than the want of proper action of the remedy? A first paroxysm of gout is frequently easily controlled in a short time, and by a mild remedy, but each successive paroxysm fixes the diathesis more firmly on the system, until after a time no remedy will cure or cut short the duration of an attack, it only palliates the pain. A certain length of time is required, and a certain amount of abstinence necessary to enable the medicine even to relieve the symptoms; the gout then disappears for a time, and returns again at its regular period. Even in these instances colchicum greatly relieves the severity of the pain, and is necessary before a cure is effected. Another error is frequently committed:—Colchicum, and it alone, without regimen or diet, is depended on, and as it gives relief nothing is administered afterwards to correct the still existing depraved condition; whereas, had proper after treatment been resorted to, the patient would not be left in a condition to find fault with the injurious action of any medicine. One thing is certain, a majority of the cases of gout we meet with, are quickly cured by the action of colchicum, and in many other cases it affords great relief from the pain, and is frequently the only medicine capable of giving relief. It is as near a specific in gout as an other medicine in other disorders; but it will be recollected that there are no specifics. Guestenberg demonstrated that colchicina afforded great relief to old and chronic cases.

Antidotes.—It has generally been supposed that tannic acid was an antidote to the poisonous effects of colchicum. Acting upon this view, Aschoff administered 15 grains of tannin to a dog, to which he had previously given one grain of colchicina; it had no antidotal effects. It will be remembered that I administered 20 grains of tannin in combination with 2 grains of colchicina, and afterwards gave 30 grains more of tannin, and that it had no effect in preventing the action of the poison, or prolonging the life of the animal. From the rapid manner in which colchicina was absorbed by animal charcoal, Carter recommends it as an antidote, and if it could be administered immediately I have no doubt that it would be perfectly protective

until means could be adopted to remove the whole from the stomach; but unless administered immediately it would be of no effect—because the absorption of the poison is rapid, and it would in no way counteract its action when once absorbed. Magnesia also has been recommended; but magnesia is very frequently given in large doses with tincture of colchicum, and yet the colchicum produces its peculiar effects. All that can be done is to counteract the effects of the poison, and this I conceive will be most successfully accomplished by full doses of opium and stimulents, with free diluents.

Doses.—Of the article made by Oberlin, and by myself, about one-twentieth grain should be the maximum dose. I found one-forty-fifth to one-thirtieth to be safe if not too frequently repeated. In these doses it produced promptly its characteristic effects, and had the advantage over any of the crude preparations that it was definite, and did not deteriorate on keeping. It is always difficult to get a good preparation of colchicum, and hard to keep it good. This, when once prepared, does not change, and is definite in its action.

RESINA PODOPHYLLI (PODOPHYLLIN).

Physiological Effects.—I am not aware that any physiological experiments that have been published have been performed on animals, either with the podophyllum root or with the resin. I have performed some few experiments on animals, but mostly to ascertain the purgative effects of the resin. With the fresh root I have tried no experiments either on man or animals, but from the descriptions found in the books, and from the relation of some few cases to me, it seems to produce great irritation of the intestinal canal, gripings, prostrating emesis, and catharsis, an irritable and frequent pulse, and profuse salivation. These irritant effects are produced by a volatile principle existing in the green plant and root, which is mostly dissipated on drying. The effect of the green root or plant, or the fresh decoction of them, upon the mouth and salivary glands, resembles in a mild degree that of the *Arum triphyllum*, and the profuse salivation produced is principally the effect of the local stimulation, for salivation is but very slightly induced by the dried root or resin, unless it is given to its emetic effect; then it acts as emetics in general, and freely increases the secretion of saliva. It has been so frequently asserted that podophyllin produces salivation that I have taken much pains to ascertain its action in this respect, and I found, when given in pills or capsules in small and frequently repeated doses, or in one large dose, that it has

no persistent sialagogue action, and no effect like mercury, producing soreness of the gums, fœtor of the breath, and profuse and continued secretion of saliva. As I before stated, when given to its nauseant or emetic effect, it always induces a free secretion of saliva, but as its emetic action passes off so does its sialagogue action also. But if the resin is given in powder, so that it produces a local stimulation upon the glands, I have seen abundant secretion of saliva for one or two hours. In this way it is merely a topical irritant, not a true sialagogue. There are no means of ascertaining whether the resin when passed into the stomach in capsules can be detected in the saliva, but that it exists in the saliva, when administered by the mouth in powder there can be little doubt, for the resin is soluble in the saliva.

Of the commercial podophyllin (of Messrs. Keith's manufacture) I have given two grains to a dog; in eight hours it produced three free alvine evacuations. The same dose was repeated the next day, and it acted on the bowels in three hours, and during the day caused more than a dozen evacuations. To the same dog I administered, by hypodermic injection, under the skin of the leg, one grain of podophyllin dissolved in liquor potassæ. It produced great local irritation, free purging in two hours and twenty minutes, evident colicky pains, and much tenesmus, with retching, but no vomiting.

To a man suffering with constipation of the bowels I have sprinkled two grains of the resin in fine powder over a large indolent ulcer. It caused great pain in the ulcer, free catharsis in six hours, with nausea and severe griping pain. Within twenty-four hours it acted on the bowels seven times. The appearance of the ulcer was improved by the application.

Podophyllin, when administered to a person in health, is an efficient and certain cathartic; slow in its operation if administered in proper medicinal doses, but if administered in large doses quick and violent in its action, causing nausea, vomiting, and repeated and painful purging of mucous and bilious matters. When taken in powder in moderate doses it is not very disagreeable when first put into the mouth, but as soon as the saliva dissolves a portion of it becomes disagreeably bitter and nauseous, and the sensation it leaves in the mouth and fauces is quite unpleasant; when taken in this way there is a free secretion of saliva for some time. When I have taken the powder finely rubbed up with sugar in this way there is no sensation experienced in the stomach for an hour or more, excepting the first sensation of nausea from the disagreeable taste. In about an hour, if it has been taken fasting, there is an uneasy

feeling in the stomach, accompanied with nausea and free salivation. This lasts for about an hour, and it feels as though a large secretion of gastric fluid was being poured out, and the stomach feels as if in a state of commotion. Soon the influence is felt in the small intestines, and unmistakable sensations of the secretion of the bile are experienced. In this stage of operation it produces on me exactly the same sensations as I experience from a full dose of calomel. The influence continues to be felt through the whole length of the intestines, producing active peristaltic motions, and the sensation as though acrid bile was freely passing. In about five hours one grain will purge me quite freely, and this is followed within two hours by two or three free bilious evacuations, producing upon me the same sensations and the same bilious-appearing alvine evacuations that I experienced from the same proportionate dose of calomel. In this dose it does not gripe nor produce much tenesmus, but during the whole time of its passage through the intestines there is an unmistakable sensation of a dose of medicine producing a cathartic effect within. If the same dose (one grain) is taken immediately after eating, and protected in any way so that it does not touch the mouth, no effects whatever are felt from it for two or three hours; then the effects in the intestines above described are experienced in a very modified degree, and the result will be one copious pulsatious evacuation. The after effects in both instances are an increase in appetite, and a feeling of better health. Most persons will require a rather larger dose of the commercial article than this, and many can take three grains.

Therapeutical Effects.—Podophyllin was first and most largely used by the "Eclectics," and many of them have written intelligently upon its therapeutic applications. By the Eclectics it has been called Vegetable Mercury, and its use has been recommended in all diseases in which mercury has been found to be of service. To a certain extent, and in some of its effects, it certainly does much resemble that drug.

Its greatest use is in that class of diseases usually called bilious disorders; that is, in those disorders where the whole digestive organs are deranged. In these disorders a dose of one, two, or three grains of the commercial podophyllin will be found to excite the secretion of all the abdominal organs, acting as an efficient purgative by this increased secretion. The largest number of patients whom we are called upon to treat are suffering more or less from these disorders, and it has undoubtedly been too much the case to give some mercurial for their

relief. In these disorders podophyllin, combined in the manner we shall hereafter describe, is fully as efficient to cause a free secretion from the intestinal mucous membrane, and from the liver and pancreas, as any of the preparations of mercury, and it is infinitely safer. There is a very grave accusation made against our Militia Army Surgeons for using too much blue pill and calomel in these disorders, and although the accusation is an unjust one against the majority of the surgeons there are undoubtedly some against whom it is too true. Our soldiers, who are so much exposed, should not use mercurials if it can be possibly avoided, and this article will, if properly given in these disorders, have a more beneficial effect, and will produce none of the evil consequences of mercury. There is but one drawback to its use, that is the inability of the patient being upon duty for ten or twenty hours after taking it owing to the nausea and tormina it produces if given in a full dose. In some of the forms of hepatitis it is of great value, and causes a full secretion of bile, but as this is not the only indication in the acute form of the disease, it cannot be relied upon to check the inflammation. In chronic hepatitis I have found it of very great service, acting better than any other remedy I am acquainted with, as it relieves the portal circulation by its action on the secernents. In this disorder it is not necessary, in fact it is frequently injurious, to give it in large and powerfully cathartic doses; I have found it better to give it in small and frequently repeated doses upon an empty stomach, sometimes combined with veratrum or hydrocyanic acid, at other times with strychnia or capsicum. The amount of bile and intestinal mucous secretion carried off by treatment of this description is sometimes enormous.

There are few diseases in which it is of more service than habitual constipation. In this disease small doses taken with the meals (frequently in combination with strychnia and capsicum) will in the majority of instances relieve the disorder within two weeks. It needs but proper graduation to give it in just the proper proportion.

From its thorough action upon the whole intestinal mucous surface, and upon the large glands, it is one of the best eliminants in infantile convulsions. For the same reason it advantageously follows the use of anthelmintics.

But as from the experiments I have made with it I will endeavour to give its mode of action, I would rather leave its application in diseases to your own judgment. If you know its physiological and therapeutic action, you can apply it intelligently in the treatment of diseases.

Modus Operandi.—We find that podophyllin consists of two resins, one soluble in ether, the other in alcohol, the resin which is soluble in ether being, in most instances, the most active. Both of these resins are soluble in solutions of a caustic alkali, and when so given act rather more quickly as a purgative than when given in combination with an alkali. It will be remembered, that when applied to an ulcerated surface it acted equally well upon the bowels as when given by the mouth, and that it also acted upon the bowels when injected under the skin of a dog. In my lecture on iodine I proved to you that the various secretions of the body had the power of decomposing, rendering colorless, and absorbing the insoluble iodide of anidine; the same is the fact with this resinous substance, which, although perfectly insoluble in water and saline solutions, becomes soluble in the saliva, gastric fluid, pancreatic and biliary secretions. It is absorbed into the blood, then, whether given in an insoluble powder, or held in solution by an alkali. So far as my experience goes, it acts with less irritation when given in solution in an alkali than when given uncombined with an alkali in either pill or powder; because in this way it is more quickly absorbed, flows freely over a larger surface, and thus causes less irritation of the mucous membrane. Most of the resinous cathartics act as drastic purgatives, and by their irritating action on the intestinal canal indirectly excite the liver, and stimulate it into activity, thus acting as cholagogues. The same result is produced in a very mild degree even in the process of digestion. But that this is not due merely to the irritation of the orifice of the hepatic duct, is proved by the dissimilarity of the operation by different materials that stimulate the duodenum in an equal manner. Again, we find that each particular medicine has its own peculiar operation, whether introduced directly into the circulation of the blood, or administered by the mouth. And we find with this agent that in whatever way administered it passes into the blood, is absorbed and carried through the system, producing its own peculiar action of exciting into activity the glandular system, and that by the augmented secretion of these glands it passes out of the blood, and removes from the system the effete matters secreted; thus doing good by removing not only from the bowels but from the glands the irritating materies morbi, no longer needed in the system, in this manner purging the blood. It is claimed for this medicine that it has an action on the liver similar to mercury, and owing to this asserted similarity it has been called vegetable mercury. How are we to arrive at the facts in this case? I am not aware that any chemical

tests could be applied to ascertain the presence of so small an amount of this agent in the liver, for it will be remembered that half a grain of the pure ethereal resin is a full dose. We cannot then, as Buckheim did with mercury, actually detect it in the liver of dogs to which it was given. But we can (and have by many careful experiments) ascertain that bile exists in very large quantities in the alvine discharges of men and animals to whom the resin has been given; and reasoning from good analogy, we can assert that it has an active agency upon the liver, because diseases of the liver and bilious derangements are cured by its operation.

Again, it is claimed for this medicine that it has a powerful *alterative* action. Using this word in its fullest sense, we cannot but acknowledge that it produces the effects claimed for it, for as the term is used it signifies medicines which *alter* for the better the state of the system. From the action that the resin exerts upon the blood we have seen that it stimulates the function and increases the secretion of various glands, in this way *altering* the composition of the blood itself, and becoming a blood medicine by the change it produces in that fluid by its true eliminative action.

It is asserted by one practitioner, that he has cured one hundred and twenty cases of syphilis with podophyllin, and that it acts as well as mercury, without any of its injurious effects. It is undoubtedly obvious to many observers that there is a great decrease in the cases of syphilis of the true Hunterian character, and that a great majority that now exist are readily cured without the use of mercury by good local and general treatment. Of such as these were no doubt the cases here spoken of. Let those cavil who will, but it is an indisputable fact that syphilis is of a milder character here than it was twenty-five years ago; and the great majority of cases can be cured without any mercury, and podophyllin in mild cases of soft chancre would be better than most other remedies.

Of its sialogogue action we have spoken in another place.

It is to be regretted that so few physiological and chemical experiments have been performed with this medicine, for without them we are to a great extent ignorant of its true *modus operandi*. I have before promised you that, with Dr. Elsberg's assistance, I will at our earliest convenience give to the public a work on New Remedies and their Therapeutical Application. Before that work is published I will endeavor to institute a series of experiments, so that we may be able to give a more full and ample account than I can now do, and with this expla-

nation you will excuse me for leaving unsaid many things regarding it that you would otherwise have expected of me.

Doses, and Modes of Administration.—As the podophyllin made by different manufacturers differs in its composition, the amount required for a dose will vary according to the sample that is taken. Again, it will vary in its action; for when the pure resins is taken alone it acts more quickly, and produces more pain than when given in combination with some emminative or sedative. Of the samples that are in the market the full purgative dose for an adult will vary from one to three grains. The amount necessary to be taken will vary of course with the effects required to be produced. If an ordinary dose of “bilious medicine” is required for an adult man, a very good pill will be:—Podophyllin, two grains; capsicum, two grains; both finely powdered and well rubbed together, and made into a mass with a small amount of honey. This pill may be taken at bedtime, and will generally operate in the morning, without causing much uneasiness. If a dose is required for a delicate female, a pill may be made in the following manner:—Podophyllin, dried carbonate of soda, each one grain; extract of hyoseyamus, two grains. This will be moist enough to work into a pill, and may be taken at bedtime. It is difficult to get children to swallow pills. I therefore usually prepare a syrup in this manner:—Podophyllin, four grains; liquor potassæ, sixteen minims; syrup of ginger, one fluid ounce. The podophyllin, in fine powder, is rubbed in a warm porcelain mortar with liquor potassæ, and as saponification takes place the syrup is gradually added. For a child from six to ten years old, the dose will be a teaspoonful.

Book Notices.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By GUNNING S. BEDFORD, A.M., M.D., Prof. of Obstetrics and of Diseases of Women and Children, and of Clinical Obstetrics, in the University of New York; Author of “Clinical Lectures on Diseases of Women and Children.” Second Edition. New York: William Wood, 389 Broadway.

As the first edition of this work was issued scarcely six months since, and was then highly recommended in the pages of the EXAMINER, it is unnecessary to make any extended

notice of this second edition. Indeed, the fact that a second edition has been called for in so short a time, is the strongest proof of the high estimation placed upon it by the profession. It is a very full and complete treatise on the Science and Art of Obstetrics. The publishers have also executed their part of the work in good style. It should have a place in the library of every practitioner.

MINOR SURGERY. On Bandaging and other Operations of Minor Surgery. By F. W. SARGENT, M.D., Member of the College of Physicians of Philadelphia, one of the Surgeons to Wills' Hospital, etc., etc. New Edition, with a Chapter on Military Surgery, By W. F. ATLEE, M.D., and 187 Illustrations. Philadelphia: BLANCHARD & LEA. 1862.

This is just such a work as its title imports. The first edition has been some time before the profession and its merits are well known. The present edition is considerably enlarged and, with the chapter on Military Surgery, will be found exceedingly convenient, and valuable to all members of the profession; but more especially so, to Military Surgeons and Students. It is published in the well-known excellent style of Blanchard & Lea. 12mo., pp. 383.

Nineteenth Annual Report of the Managers of the New York State Lunatic Asylum. Transmitted to the Legislature, Feb. 5th, 1862. New York.

This is a neatly printed pamphlet of 39 pages, chiefly occupied with a statistical report of the Superintendent and Physician, Dr. JOHN P. GRAY. There is also a brief report from the Board of Managers and the Treasurer, with an appendix, containing the laws regulating the admission of patients, and the general management of the Institution.

Forty-fifth Annual Report, on the state of the Asylum for the relief of persons deprived of the Use of their Reason. Published by request of the Contributors. Third month, 1862. Philadelphia.

This report has reference to one of the oldest and, perhaps, best managed asylums for the Insane in this country.

The present Medical Superintendent and author of the report is Dr. J. H. WORTHINGTON.

Annual Report of the Officers of the Indiana Hospital for the Insane. For the year ending Oct. 31, 1861. By JAMES S. ATTON, M.D., Superintendent. Indianapolis.

This report is similar in its character and interest to the two preceding, though printed on poorer paper and in inferior style. These several reports in relation to the Insane, afford much material for reflection and interesting inquiry, especially in relation to the causes of mental derangement. For instance, these three reports state the probable causes of Insanity in 3073 cases. Of these 461 are ascribed to "ill-health;" 230 to "domestic trouble;" and 177 directly to "intemperance." But it is our present purpose simply to announce the publication of these reports, without commenting on their contents.

THE ACTION OF THE VOLUNTARY MUSCLES. An extract of sixteen pages from an unpublished work. By LOUIS MACKALL, M.D., Georgetown, D.C.

In the pages sent us with the above title, Dr. MACKALL advances the doctrine that the *active* state of a muscle is that of *elongation* instead of contraction; thus reversing the mode of action hitherto regarded as fully established.

Thus he says: "The extension of the leg on the thigh is effected by the action of the muscles on the *posterior* surface of the thigh bone or femur, while the leg is flexed on the thigh by the action of the muscles on the *anterior* surface of this bone;" &c. He represents the innervation or active determination of nerve force to a muscle, as producing *erection and elongation* of its fibres; while the withdrawal of nerve force produces contraction and repose in the muscle. To establish these novel doctrines in relation to muscular action will require a much stronger array of facts and experimental demonstrating than are to be found in the pages sent us by Dr. MACKALL.

THE LONDON LANCET, for May is, as usual, promptly on our table. It also contains its usual amount of practical and interesting reading matter.

Editorial.

EDITORIAL CORRESPONDENCE.—CONGESTIVE OR PERNICIOUS FEVER.—The following letter from Dr. ORMSBY, in relation to a case of sudden death will be read with interest; and we copy it entire, for the purpose of bringing the subject of pernicious fever more fully before our readers. The letter is as follows:—

CASE OF CEREBRAL CONGESTION.

On the morning of 28th March, 1862, was called to see J. C. of the 18th Regt. Ill. Vols., American, farmer, aged 22 years, of rather short stature, but stout, and usually very healthy. I found him laboring under an attack, as I thought, of remittent fever, presenting the ordinary symptoms, with nothing to indicate that it was of a severe grade or an unusual type. I found the face flushed, the eyes partially suffused, pupils natural, tongue soft and moist—with only a light coat, the pulse 100, full, and of ordinary strength.

The bowels were somewhat relaxed, and complaint was made of pain in the head and bones; was informed he had some fever during the previous day, which had subsided in the night. His prescription was, pulv. Dover, hydrarg. cum creta, aa grs. xxx, M., divide in five parts; one to be taken every two hours, with mucilage of gum arabic, until the subsidence of the fever, when he was to have: quinine grs. xx; Dover grs. xv; pulv. capsic. grs. v, divided into five equal parts, and taken in the same manner as the former. Next morning, found him apparently considerably better; but still complaining of pain in the head and bones. Fever had not entirely subsided, but was much lower, and I gave the nurse directions to give the tonic at once, so that he should get the twenty grains of quinine within the next ten hours. This, as I subsequently learned, was done, his fever not rising so high as on the day previous. I heard no more of the case until 7 o'clock A.M., the following day (March 30th), when I was sent for in haste to visit my patient. I found him insensible, lying on his back, with flushed

face, dilated pupils, strong pulse—but not more than 80 to the minute, and upon raising his head found tonic spasm of the muscles of the back, amounting to slight opisthotonus. The hands and feet were warm, the skin on the extremities full, and the circulation to all appearance good. The breathing was a little slower than natural and stridulous: expiration being well performed, but inspiration accompanied by a sound similar to that heard in pertussis.

I immediately made a copious application of cold water to the head and neck; sinapisms to the abdomen, wrists, and ankles; and let fall two drops of *ol. tigllii* upon the tongue. Before we had completed these operations, I noticed that inspiration became more difficult, and the heart became much exerted. In a few minutes more the face assumed a purple hue; bloody foam in large quantities burst from the lips; and the man expired within a half hour of the time of my arrival. The great amount of blood which flowed from the mouth strongly suggested a broken vessel in the lungs: how this was I cannot say. The face was full of blood, and the entire body quite warm immediately after death. I should mention that a few minutes before death, the action of the heart was so strong and tumultuous as to be very plainly visible to the eye, and to shake the patient's entire body.

Upon inquiry, I learned that he had said, early in the morning, that he felt much better, and wanted some breakfast cooked and brought to him. He then got up, went out of the tent, stayed a few minutes, came back and lay down again on his bed. When his breakfast was brought, he said he felt worse, and would not eat. About 15 minutes afterward, I was called and found him in the condition described, which was so suddenly fatal. Now, I have taken the liberty to call this a case of congestion of the brain; and believe it to have been produced by miasmatic influence; but as to the precise pathological condition, I must own I am at fault. It is much to be regretted that unavoidable circumstances prevented a post mortem. But such being the case, let me enquire: What injury to the brain or spinal cord would produce such a defect in the respiratory ap-

paratus? Sudden dropsy of the arachnoid, produced by paralysis of that membrane, has been suggested to me; but I cannot yet see my way clearly through the case upon that hypothesis, and so beg leave to sit back and object, until further explanation is made. I should be very much obliged to the Editor of the EXAMINER (or any other medical man of large experience,) for a minute statement of the inferred pathology of this case, and suggestions in the way of treatment. Such an exposition would be of very great interest to me, and perhaps to others, as I am informed that the case is isolated from others of a similar nature *only* by extraordinary severity.

O. B. ORMSBY, Assistant-Surgeon,
18th Regt. Ill. Volunteers.

The case thus fully described, undoubtedly belongs to that variety of *malarious* fevers variously designated by writers as *Congestive*, *Pernicious*, and *Malignant*. From an intimation in the above letter, we infer that attacks of the same variety, though less rapidly fatal, have been somewhat frequent among the volunteers on the Tennessee River, during the month of March. If we remember that the weather there, during that month, was much warmer than here, equally wet, and the soil highly favorable for the development of malaria, we shall have no difficulty in accounting for the prevalence of such cases, so far as they may depend on the presence of malaria. The following letter from Dr. NEYMAN, referring to another and distant section of the country, and giving a brief but interesting account of the symptoms of the same variety of fever, is of much interest in this connection. The writer calls it a "dreadful malady," prevailing at the date of his letter, May 16, 1862, but we regret that he does not tell us how *early* the first cases occurred. The letter is as follows:—

CEDAR BLUFFS, IOWA, *May* 16, 1862.

DEAR DOCTOR:—There is at present a dreadful malady prevailing in and about the Grinnell in this State, which has resisted the best directed efforts of our physicians. It has been noticed quite extensively in our newspaper literature, but I do

not remember of seeing anything in the journals. I have not had an opportunity of investigating it fully; therefore, what I may say will be premature and unsatisfactory, and far from authoritative. I have conversed with several very intelligent physicians, whose opportunities for observation have been ample, and from what I have ascertained from them, and by personal observations, I have come to the following:—

Symptoms.—The premonitory symptoms which furnish an invariable indication of its approach are: for two or three evenings before the final paroxysm, the patient feels chilly; draws his coat tightly around him: draws near the fire, if there exists any. He thinks nothing of this, attributing it to a change in the atmosphere. Coincident with this are dull aching pains in the bones; lassitude; non-inclination to change positions; languor; &c. The final paroxysm—which almost invariably occurs in the evening, and almost as certainly proves fatal—consists of complete collapse; cold extremities, with but little chilliness; great apathy; recklessness of life; comatose; replies with difficulty to questions, and then sluggishly, relapses immediately into comatose condition. In fact, all the symptoms usual in what is known as congestion or “sinking” chill, only in a magnified degree.

Treatment.—If the premonitions are heeded, or the patient can be safely guided through the first *chill*, brandy and quinine proves as infallible a remedy as quinine for our ordinary intermittent fever, or sulphur for the seabies.

Cause, Miasma.—Our country had been flooded by rains and melted snow until our soil was completely saturated; the hot days coming dried up our land so suddenly that the previous mud became a resisting impervious crust. Is the disease anything else but an unusually malignant form of the *Congestive Chills*?

This account has been drawn up hastily. I thought it might possess some interest to you. I remain yours, respectfully,

E. H. NEYMAN.

The months of March and April, in this city and vicinity,

were unusually cold and wet; and attacks of pneumonia and pleurisy were more frequent than in ordinary seasons.

Many of the cases of pneumonia were accompanied by plain indications of a malarious influence, while others speedily assumed a strongly typhoid character. During the latter part of February, several thousand prisoners were sent from Fort Donelson to Camp Douglas, located on the Southern margin of this city. Many of these were speedily attacked with pneumonia of a very severe grade. During all the month of March, the grounds of the camp continued very wet and the weather cold. It was not until the middle of April that the soil began to be comfortably dry and some of the days warm. From the middle of April to the 10th of May, pneumonia has been less frequent both in the city and the camp; but both have furnished several cases of severe and rapidly fatal *pernicious fever* or "congestive chill." One of the physicians to the camp informed me, that during one week not less than ten or twelve cases of this disease occurred among the prisoners, and a large majority of them terminated fatally during the first or second paroxysm. About the same period of time, several cases of this variety of fever occurred in different parts of the city, but without any direct connection with the camp. And cases have continued to occur in the city, though few in number, until the present time. Most of the cases presented symptoms strictly corresponding with those detailed in the books, and briefly stated by Dr. NEYMAN; and yet there were some deviations of a striking and interesting character. For instance, among the first cases that came under my care, was that of Mr. M. a native of Ireland, living in the extreme South part of the city. He was naturally strong and healthy, but somewhat addicted to the use of alcoholic stimulants. When first called to see him, he was suffering from a peculiar and severe pain across the abdomen of a paroxysmal character, and steady pains in the back and limbs. He had been complaining three or four days, and on careful inquiry, I was so well satisfied that the disease was of malarious origin, that I at once prescribed powders, each containing sulphate of quinia, three grains; sulphate of mor-

phia, one-third of a grain; calomel, two grains; to be given every two hours, until the abdominal pains were relieved, and subsequently every four hours, until six doses had been taken. The patient was speedily relieved, and for two or three days continued so much better that he called at my office,—full two miles from his residence. About the fourth day, he was seized with such violent and excruciating pains in the middle of the thighs, that I was again called for. I saw him in the evening, and in addition to the peculiar and indscribable pain in both thighs, his whole cutaneous surface was cool, congested, dingy in color; the face pinched and haggard; the mind listless,—though restless and almost constantly changing position; and the pulse very small, weak, and frequent. Indeed, I was very forcibly struck with the resemblance of the symptoms to those resulting from the shock of a severe mechanical injury, as the crushing of a limb under the wheel of a railroad car. Yet he was in a sitting posture and appeared entirely rational. The remedies prescribed appeared to exert no influence whatever. The pulse grew weaker until it could no longer be felt, and the skin more livid and cold until death, which took place before morning.

Another case, which occurred only a few days since, was that of a very poor Irish woman, in the South-west part of the city. She had been complaining of feeling unwell and chilly for two days previous to any severe symptoms. Then a more decided chill occurred, accompanied by a great sense of exhaustion, lasting two or three hours. A partial reaction took place, accompanied by vomiting and purging, partly produced, no doubt, by some infusion of senna, given without any medical advice. It was after this had been going on nearly 18 hours, that I was called to see her. Found her with a very sunken and haggard expression of countenance; livid surface; cool extremities; pulse small, weak, and 140 per minute; mouth dry; constant thirst, but prompt vomiting of whatever was taken into the stomach; also frequent reddish serous discharges from the bowels, and an almost constant and severe pain in the umbilical region. The mind was listless and dull but entirely rational. I directed

mustard sinapisms to the epigastrium and spine, and small but frequently repeated doses of morphine and soda, to arrest the vomiting and diarrhœa. Regarding the attack, however, as a case of irregular intermittent, aggravated by an injudicious use of a senna purge, I also prescribed a powder consisting of sulphate of quinine, 3 grs.; pulv. opium, 1 gr.; calomel 1 gr.; to be given every three hours. The next day, I found the patient remarkably improved. The abdominal pain, vomiting, and diarrhœa had entirely ceased, and the patient thought herself almost well. The color of the skin was not good, and the pulse remained soft and weak.

I warned the attendants that there was great danger of a renewal of dangerous symptoms during the next twenty-four hours, and enjoined the faithful exhibition of efficient anti-periodic doses of quinine, with nourishment for at least two days longer. Owing to stupidity and ignorance, these directions were not faithfully carried out, and about noon of the following day, I was again urgently requested to see her. About two hours elapsed before I could answer the call, and I then found her in the last struggles of death. On making inquiry, I learned that she had remained quite comfortable until about 10 o'clock A.M., when she was seized with a most exruciating pain in the middle of one thigh. This was directly followed by all the symptoms of extreme prostration, and death followed in about five hours. It will be seen that in both these cases the fatal paroxysm was ushered in by an anomalous and severe pain in the middle of the thighs. In another case, the attack was commenced by a violent pleuritic pain in the lower part of one side, followed by a rapid failure of respiration and death. In all the other cases coming under my observation, the symptoms were substantially the same as those described by Dr. NEYMAN.

The occurrence of cases of *pernicious* fever of the malarious type, during the months of March and April, in the interior of Tennessee, Iowa, and this city, would seem to indicate some general tendency to malarious fevers of a more malignant type than ordinary. Though the cases have not been very numerous in any one locality, yet occurring early in the season, the ques-

tion arises whether they do not indicate a more extensive prevalence of the same class of fevers during the coming summer and autumn. That the case related by Dr. ORMSBY, and those alluded to by Dr. NEYMAN, as well as those which have occurred in this city, are genuine cases of *pernicious* fever or "sinking chills," I have no doubt. All those occurring in this city, and those in the army on the Tennessee River, were exposed to malaria or the ordinary cause of periodical fever, together with some of the more efficient causes of fever of a typhus type. To make my own views of the essential pathology of these highly dangerous cases understood, it is necessary to premise, that all the organized tissues of the human body are endowed with two elementary properties, viz.: *Susceptibility*, or a capacity to be acted upon or to receive impressions; and *vital affinity*, or that power by which the organic atoms of every structure are made to assume a certain relation to each other, and to attract from the blood some ingredients and reject others. These elementary properties are capable of being increased or diminished by various exterior influences. Some of these influences excite or exalt both these properties, disturbing in the same direction all the functions of the system, and causing what the old writers termed *sthenic* or *synochal* fever, and the moderns *simple irritative* or *inflammatory* fever. Other influences depress both properties, of course carrying the functions of the system in the same direction, and producing the *typhus* class of febrile diseases. Still another class of agents of a more specific character, are capable of increasing one of these properties while it diminishes the other, producing general disturbance or febrile phenomena of a peculiar and specific character, such as we see in the periodical and eruptive classes of fevers.

The primary action of malaria or the efficient cause of periodical fever, is such as to exalt the *susceptibility* and diminish the *vital affinity* of the whole system. This is the first link in the chain of morbid action, from which arise the functional derangements and changes in the composition of the blood, that so constantly mark the progress of this class of diseases. If the cause acts with moderate intensity and uncomplicated with

other causes, the result will be the production of *simple* intermittents. If the malaria acts in conjunction with other causes of such a nature as to determine a higher grade of excitement, the resulting fever will be of that variety which has been styled by Dr. DRAKE, inflammatory intermittents and remittents. On the other hand, if the circumstances of the season, locality, or individual are such as to give the malaria a more energetic effect on the vital affinity of the tissues, it may speedily so far suspend that affinity as to greatly retard all the organic or molecular changes in the tissues, suspending the production of animal heat, arresting secretion, impairing capillary circulation, and in an hour, so far enfeebling both circulation and respiration as to endanger an immediately fatal result.

But the circumstances co-operating with the action of the malaria may be such as to dangerously retard the vital affinity in only one organ or tissue, instead of the whole composing the body. Thus, in the case related by Dr. ORMSBY, the suspension of vital action or affinity took place in the brain and medulla oblongata, suspending mental functions and respiratory movements to a great extent, while the heart depending for nerve force on the ganglionic centres continued to act vigorously. This disparity between the respiratory and cardiac functions, doubtless led to the rapid apoplectic engorgement of the pulmonary tissue, and sanguineous effusion into the bronchial tubes furnishing the bloody mucus, that flowed so abundantly from the air passages at the time of death. If pernicious fever consists, as we have supposed, in a primary lesion of the elementary properties of one or all of the tissues, it is easy to see why quinine, which when given in doses of from three to five grains, powerfully increases vital affinity while it directly diminishes morbid susceptibility, proves an efficient and almost certain remedy if given in the formative stage, or before the patient is too deeply sunk in the fatal paroxysm. For these cases it should be given in full doses, and if combined with any other stimulant, we should prefer strong coffee, cayenne pepper, or camphor, to the brandy mentioned by Dr. NEYMAN. But the great difficulty in the treatment of these cases is, in the manage-

ment of the paroxysm itself—in restoring sufficient play of vital affinity to enable the tissues to respond to the action of quinine or anything else. In a strongly marked case recently under my care, the paroxysm was broken and reaction was established under the use of the following:—

R—Sulph. Quinine,30 grs.
 Aromat. Sulph. Acid,.....5ʒj,
 Water,.....5ʒj. Mixed.

I gave a teaspoonful in a tablespoonful of strong coffee every half-hour. Between each of these doses I gave a fluid drachm of a saturated solution of chlorate of potassa. Mustard sinapisms were also placed over the spine. After reaction was established, full anti-periodic doses of quinine, with two or three alterative doses of calomel, were given every three hours, until the patient was safe from a renewal of the paroxysm. If vomiting or diarrhœa existed, I would add to the above solution of quinine a small proportion of sulphate of morphia. The only additional remedy for establishing reaction in these dreaded paroxysms, in the efficacy of which we have any confidence, is the thorough application of the cold douche, followed by dry friction, or what is better—the alternate application of the cold wet sheet and the warm and dry blanket. But we have no space to pursue the subject further.

UTERINE HEMORRHAGE.—Dr. H. WANZER, of this city, sends us an account of a case of Uterine Hemorrhage, occurring in a lady at the 4th month of her term of nursing, and asks whether it was “an attempt of nature to re-establish the menstrual flow, or was it a case of early pregnancy?” From the fact that the hemorrhage came on gradually; was unaccompanied by either uterine pains or abdominal tenderness; continued without being apparently much influenced by internal remedies, about the usual time of the monthly flow, and then ceased under the influence of the tinct. ferri murias, we should regard it as a case of menorrhagia.

NEW YORK OPHTHALMIC HOSPITAL.—The Directors of the

above Institution having leased the spacious old mansion of Peter Cooper, Esq., at the corner of Fourth Ave. and 28th St., removed their Hospital to the above place, on the 1st inst. The location is a central one, being near the terminus of the Northern and Eastern Railways, and convenient to the poor from all parts of the city, besides being in the vicinity of the Medical Colleges, giving Students of Medicine an opportunity to witness operations and to attend the Ophthalmic clinics at the Hospital. The attending Surgeons are Drs. Mark Stephenson, John P. Garrish, and Marcus P. Stephenson.

Consulting Surgeon, Professor Valentine Mott, M.D.

The building has been thoroughly repaired for the accommodation of patients. The price of board is \$3,50 per week. Advice and medicine to the poor from all parts of the United States gratuitously given. That distinguished philanthropist of New York, Peter Cooper, is President of the Association. Over 10,000 patients have been attended since its organization in 1852.

GENERAL LITERATURE AND ART.—The Eclectic Magazine of Foreign Literature. W. H. Bidwell, editor and publisher. Published at No. 5 Beekman Street, New York.

The June number of this most excellent monthly of foreign literature is just received. In addition to the full complement of instructive, important, and entertaining matter usually found in this magazine, it contains a beautifully engraved portrait of His Royal Highness, Prince Albert, the late Prince Consort of Queen Victoria.

“ILLINOIS FARMER,” and “PRAIRIE FARMER.”—We receive regularly and promptly both these interesting and valuable agricultural Journals. The first is published in Springfield, Ill., and the second in this city. They certainly deserve a very wide circulation throughout the great agricultural community of the North-west.

THE PLACENTA,

THE ORGANIC NERVOUS SYSTEM, THE BLOOD,
THE OXYGEN, AND THE ANIMAL NERVOUS
SYSTEM, PHYSIOLOGICALLY EXAMINED.

BY JOHN O'REILLY, M.D., F.R.C.S.I.

S. S. & W. WOOD, 389 Broadway, New York.
JNO. CHURCHILL, New Burlington St., London.

EXTRACTS FROM NOTICES.

"DR. O'REILLY is evidently an enthusiastic student in whatever department of medical science he directs his inquiries. He chooses by preference the most abstruse subjects, and brings to their investigation experimentation, observation, and ratiocination. To give the various questions which the author has brought forward, and subjected to critical analysis, a complete examination, would be a task for which we have neither time nor space. Nor would such review profit the reader who has access to Dr. O'Reilly's work. It embraces a mass of propositions, experiments, and conclusions, which no one can properly appreciate without carefully perusing the work itself. The author has done a good service by giving to his various publications this permanent form."—*Medical Times*. (New York.)

"We would, therefore, ask for the work of Dr. O'Reilly a favorable reception; not because its author can be said to have been successful in the establishment of the doctrines advanced by him in relation to life and nerve-action, but because of our belief that a study of the treatise will be calculated to open a wide field of inquiry, the proper cultivation of which is destined to yield valuable fruit.

"In the volume before us will be found a fund of materials for thought, the accumulation of which has evidently cost its author no trifling amount of research; and, likewise, a series of inductions which cannot fail to arrest the attention of the reader, and incite in him a desire to investigate the premises upon which they are predicated, with the view to test their validity.

"It is true that there is scarcely a page of it which does not present some startling proposition; all of which may, possibly, turn out, in the end, to be truths."—*American Journal of Medical Science*. (Philadelphia.)

"That Dr. O'Reilly has considerable independence as a thinker, and displays an unusual vigor in the character and manner of his inquiries, is not to be disputed. He labors, too, in a field of investigation where earnestness of purpose is certainly requisite for any degree of success."—*Cincinnati Lancet and Observer*, (Ohio.)

"The subjects treated of possess an absorbing interest and importance to the physiologist; and, although the propositions Dr. O'Reilly offers are startling in their novelty and boldness, he has presented such an array of facts and authorities, has evidently expended so vast an amount of research and thought, that they claim more than consideration—investigation; and the student in this domain cannot but thank him for the many interesting paths he has pioneered for further exploration. Every page is replete with some new view, some unlooked for grouping of recondite and apposite facts; and these analogies, so novel and yet so correct, in most cases, furnish him with the most interesting and—if true—the most momentous deductions and inferences."—*Chicago Medical Examiner*, (Illinois.)

"All through his book, Dr. O'Reilly proves himself a profound anatomist, as well as a physiologist; indeed, we might almost say, that to the latter study he has, if possible, devoted himself the more closely. It is, therefore, that we claim for him a careful and thoughtful perusal of his theories, in which he gives the nervous system an importance and prominence not hitherto awarded it."—*Dublin Medical Press*, (Ireland.)

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ARTICLE XVI.

RETAINED PLACENTA.

By F. R. PAYNE, M.D., of Marshall, Ill.

Read before the ÆSCULAPIAN SOCIETY, at Paris, Ill., May 28, 1862.

All practitioners deeply feel the responsibility that rests upon them in the third stage of labor. Nearly all of our best obstetrical writers regard this as the trying hour, not only of the mother and child, but also the practitioner. Ignorance at this hour may result in the loss of the mother and child, and bring reproach upon the physician. Fully impressed with the importance of the subject, I propose briefly to discuss, and knowing that my positions are not fully endorsed by many of our obstetrical instructors, it is expected and desired that the members of this society enter into a full and honest discussion of the subject. We all know that the practical departments of our profession are not perfect, consequently we love to read the experience of our professional brethren, when we know that it is honestly and fairly given. It would be infamous quackery, if not downright murder, for a physician to hatch up cases to support a favorite theory. Experience is worth nothing unless it is intelligently, honestly, and truthfully given.

Before I proceed to present my cases and experience relating to retained placenta, it would perhaps be proper to state that

there is no direct communication between the vessels of the fœtus and those of the mother. The fœtal tufts are simply bathed in the maternal blood, and draw nourishment by their own cells from the mother. The placenta is truly the absorbing and respiratory organ of the fœtus.

In a practice of nearly twenty years, and the management of over one thousand labors, I have met with three cases in which retention of the placenta could not be overcome.

CASE 1.—In 1854, I visited Mrs. L. aged 36 years; she had a pretty good constitution, and was the mother of six children. The confinement prior to this, there was considerable difficulty in removing the secundines. She lived six miles from town, and had employed Mrs. Rhodes, a midwife living in the neighborhood. The child was born without serious difficulty, but the woman in attendance could not get the placenta. I was sent for, and arrived at the house about ten hours after the birth of the child. In a few moments a vaginal examination was made, and I soon learned that the placenta could not be reached without the introduction of the hand into the cavity of the uterus. A large anodyne was given, and the patient permitted to rest until its narcotic effects were visible. My hand was then well oiled, and a slow, cautious effort made to introduce it into the womb. This operation produced much pain, the parts were swollen and tender, but I finally reached the cavity of the uterus, and learned that the placenta was on the right side, near the fundus, and partially adherent. A slow, gentle effort was made to detach it, the patient complained bitterly. About one-third of the afterbirth was in my hand. At this stage, the patient was seized with severe rigors, and in a few moments had a violent convulsion. The hand was withdrawn, bringing with it that portion of the placenta that was detached. The cord and all of the membranes were left in the uterus. The following was directed:—

Hyd. sub. muri.....15 grs.

Pul. Opium,..... 6 grs.

Make three powders, one every three hours, if no operation in five hours salts and senna. Also, the free use of uva ursi tea.

After this, I used vegetable cathartics every twenty-four hours, and continued the opium powders in two to three grain doses.

She remained unconscious for four days, and on the eighth day, the remaining secundines were expelled, and the woman rapidly recovered. She has given birth to a healthy child since that time, and now enjoys good health.

There were no bad effects made manifest by the absorption of decomposed matter—the system was not poisoned, neither was there alarming hemorrhage. In this case two-thirds of a full grown afterbirth was expelled in eight days by nature, without injury to the mother.

CASE 2.—Mrs. B. aged 33 years, aborted during the fifth month. The child was expelled ten or twelve hours before I was called. A vaginal examination revealed the fact that the os uteri was firmly and rigidly contracted, and the secundines were in the womb. A large anodyne was given, and in a few hours I made a long, persevering effort to remove the placenta. Every effort to dilate the os brought from the patient unmistakable evidence of great agony. After two hours of untiring perseverance, I resolved to leave the case to nature. Ordered pul. opii. every four or five hours, and the free use of uva ursi tea. Her bowels were kept regular by mild cathartics. In eight days, the secundines were expelled from the womb, and the patient rapidly recovered. It may be proper to state, that I made several unsuccessful efforts to remove the offending substance before nature came to her relief. The lady got along well; the room “and adjoining apartments” were not “filled with an intolerable stench.” She had no more hemorrhage than in ordinary cases, and no evidence of the absorption of decomposed matter into the system; and has since this accident given birth to a healthy child.

CASE 3.—Mrs. A. The husband of this lady, a very intelligent and worthy man, called at my office, and stated that his wife had slight labor pains. She was five or six months advanced in pregnancy—first child. She was able to move about the house; general health good. I supposed the pains were caused by dilatation and expansion of cervix uteri; ordered perfect quiet and gave a few powders of sulp. morphia.

The next day I was called to see her, and learned that she had suffered severely during the first part of the night with labor pains, but for eight or ten hours they had entirely ceased. There had been a discharge of liquor amonii and slight hemorrhage. An examination revealed a child in the vagina—shoulder presentation, right hand in the womb. Without much difficulty or pain I brought the head down and delivered a dead child. After this I took the cord in my left hand and made it slightly tense, and with my right index finger followed it to the os uteri, which I found irresistibly rigid. The cord was firmly grasped by the os, and I could not introduce my finger into the womb.

A large dose of morphia was given, and after its effects were made manifest, a prolonged and cautious effort was made to dilate the os and remove secundines, but without success. The finger finally entered the os, but my patient suffered greatly; the placenta was distinctly felt but could not be removed. Thinking the usual instruments invented for dilating the os not superior to my finger, further effort was not made, and the case was left to nature. On the ninth day she had slight pains, and the secundines were expelled. Up to this time she was quite well and cheerful: felt like she could get up and move about the house, but when the pains came on that threw off the placenta—she had considerable hemorrhage. This soon ceased, and the lady rapidly recovered and now enjoys good health.

With these cases, briefly reported, the question arises, what are the causes of retained placenta? Prof. MILLER gives three: atony of the uterus; morbid adhesion of the placenta; irregular contractions of the uterus.

Atony of the womb may readily be detected. The uterus is large, flabby, and shapeless; there are no pains, considerable hemorrhage, and the afterbirth cannot be reached with the finger. Protracted labors are liable to result in uterine atony. BAUDELOCQUE thinks a too rapid expulsion of the foetus may cause atony. Dr. DEWEES says, retention from want of tonic power must not be interfered with until by friction the organ is compelled to contract under the hand. Prof. MILLER does not

like this rule, from the fact that friction over the region of the womb will not always make it contract; but he then knows he has a *hand*. He also contends that the introduction of the hand into the cavity of the uterus, in cases of atony, is "neither a painful nor difficult operation." This is all true if the accoucheur is on hand when the child is born.

But if, as is frequently the case in country practice, ten or twelve hours elapse before you reach the patient, the operation is not only painful and difficult, but liable to result in serious injury to the patient. Prof. MILLER says, "Let it be remembered, then, that the placenta cannot be allowed to remain in the womb without the imminent risk of alarming hemorrhage, which may occur at any moment, and destroy the patient before the practitioner can come to her rescue." He also states, "if let alone it *might* do well." Dr. BLUNDELL remarks, that he has "noted more than one case in which the placenta had remained for a long time in the uterus without a single conspicuous symptom of irritation becoming manifest."

I do not quote these authorities for the purpose of discouraging at all times the introduction of the hand into the cavity of the uterus when it is necessary and can be done without serious injury to the patient, it is certainly right, and the physician would surely fail in the proper discharge of his duty if, after all other means fail, he forgets that he has a *hand*.

RETENTION FROM MORBID ADHESION.—This is not a common cause of retention, but when it does occur, more danger is to be apprehended than in simple atony. I have never had a case of complete morbid adhesion. In case one, it was partial, but the hemorrhage was not alarming. If I should meet with such cases, the recommendation of BOUDELOQUE and DEWEES will not be followed,—that is force to the placenta, by means of the cord, for the purpose of disrupting its attachments. This is surely unsafe and might result in inversion of the uterus. Dr. MILLER says, "the existence of morbid adhesion may be *suspected* when the uterus feels firmly contracted and the placenta is, notwithstanding, so high as to be beyond the reach of the finger, but it can only be certainly detected by the hand carried into the cavity of the uterus."

RETENTION FROM IRREGULAR CONTRACTIONS OF UTERUS.—

In relation to this form of retention, I cannot speak from experience. A case has never occurred in my practice in which I could detect, according to the rules laid down by Prof. MILLER and other obstetrical writers, irregular contraction of the womb. But I have found, in two cases of abortion after quickening, irresistible rigidity of the os, at the same time the uterus forming a hard regular ball in abdomen. This normal contraction of the womb always banishes my fear of excessive hemorrhage. Dr. RAMSBOTHAM says, "We hear much of hour-glass contraction of the uterus, but my belief is, there are no rarer cases in midwifery than the real and true hour-glass contraction." This accords with my observation.

Dr. D. O. PRIESTLEY recently read a paper on retained placenta, before the Obstetric Society of London, in which he says, "In the third, fourth, and fifth months the decidual cavity is obliterated, the placenta has acquired more intimate attachment to the womb, and the contractile power of the uterus being greater, rupture of the membranes commonly takes place before expulsion. The embryo having escaped, the secundines may soon follow, or lying in the os uteri they may be removed by the finger or some simple instrument. In a considerable number of abortions, however, in which the fœtus and liquor amnii have been voided the secundines are not soon extruded, and after the uterus has made repeated ineffectual efforts to expel them the os uteri closes and action ceases." We occasionally meet with cases of this kind, and they are exceedingly embarrassing from the fact that our obstetrical instructors differ widely as to the treatment we ought to adopt when the secundines are not spontaneously expelled from the womb. Dr. DENMAN, DAVIS, RAMSBOTHAM, and DEWEES are positively opposed to any attempt at extraction by the hand, and Dr. INGLEBY says, "No manual extraction can be effected prior to the sixth month." Drs. BURNS and CHURCHILL think manual interference in such cases is only occasionally allowable. Dr. TYLER SMITH recommends the forcible removal of the secundines in all cases of abortion when they are retained. He says he has met with a

considerable number of patients who seriously suffered from placental retention. His dangers as stated from retained secundines are as follows:—

1st. Flooding of a serious character, and the patient being liable to hemorrhage so long as the secundines remain in the womb.

2d. Absorption of decomposed secundines, local inflammation of the uterus and surrounding tissues, and poisoning of the system.

3d. Sub-involution of the uterus.

4th. Generation of morbid growths and hemorrhage following their expulsion. We do not doubt that bad effects may result from retained placenta.

But the question is, if the os is intensely rigid and a protracted, painful effort to dilate it accomplishes nothing, what shall the accoucheur do?

My answer would be: let it alone and your patient will be more likely to get well than she would if you resort to extraordinary manual interference. It has been my fixed purpose since I entered the profession, not to kill my patients by an extraordinary heroic resort to remedies.

I will state, not for the purpose of boasting of superior skill, (which I do not claim) that out of over one thousand cases of labor under my charge only three have died from any cause resulting from or connected with the parturient state. One of these cases was a dwarf, whose pelvis had not sufficient capacity to give birth to a full grown foetus, and was called too late to successfully perform the cesarean operation.

The other was a hearty, fat primipara patient. She had 29 convulsions before the child was born, and died in about ten hours after the womb had been cleared.

The third was a strong, healthy, short-necked, muscular woman, *primipara*. The labor was ushered in by violent pain in the anterior portion of the cerebrum. She lived six miles in the country. When I reached there I learned she had passed through 13 convulsions. Her skin was dark; pulse quick; and every symptom indicated approaching dissolution. At my re-

quest, Dr. C. L. DUNCAN was called, and my forceps were also sent for. The os was dilated barely sufficient to learn that it was a vertex presentation. My treatment was virtually that recommended by Dr. BEDFORD, in his "Principles and Practice of Obstetrics," (a book every practitioner ought to have.) She had 42 violent convulsions; and about two hours after the birth of the child she died. I shall, on some future occasion, report this case in full. This paper is prepared and presented to the Society for the purpose of eliciting discussion, and I hope the older members especially will speak freely on the subject I have thus briefly introduced.

ARTICLE XVII.

EXTRACTS FROM AN INAUGURAL THESIS ON

THE INFLUENCE OF MARRIAGES OF CONSANGUINITY ON THE OFFSPRING.

By E. H. NEYMAN, Student of Med. Depart. of Lind University.

I have chosen a curious subject, yet one that is of paramount importance not only to the physician but to the whole human family; a subject that deserves the pen of a grand lama in the medical Thibet, instead of mine. Yet, while I may not be able to clothe it in a magnificent array of language, or dive very deep down into the fountains of logic, I shall endeavor to compile, as briefly as possible, facts relating to the influence of marriages of consanguinity on the offspring.

Every one is familiar with the frequently observed fact, that when any sort of people are so confined as to compel them to intermarry for any length of time, those who are nearly their blood relations, that as an inevitable result such people weaken in mind and body.

Veterinary surgeons of eminence have always studiously held up to horse raisers, the physiological fact, that horses originally of the first stock, would dwindle down to mere dwarfs when in-

terbred for a long period. Yet, while scientific men have been so careful to note these facts, when they relate to our domestic animals—and consequently to our pockets, scientific medical men have, with either unpardonable forgetfulness, unfortunate ignorance, or culpable thoughtlessness, failed altogether to point out the vital importance of the observance of the same law in the human animal. Even if they have deigned to give it a passing glance, it was merely a superficial one, not sufficiently accurate, precise, or extended to recommend it to the mass, whom it is calculated to benefit. Since, however, the paper of Dr. BEMIS, before the American Medical Association for 1858, has excited so much physiological and social interest, there has been a new era inaugurated in the investigations of this medico-domestic subject.

A gentleman of my acquaintance, possessing a very fine dog, and being desirous to continue in the possession of the blood, bred to a very fine bitch, which dying directly after the littering of her pups, it became necessary, in order to propagate the blood, to breed one of this litter to the dog. This was carried on for several generations, each successive generation being manifestly inferior to the one just preceding it. Of the last litter there were seven; five of which died with convulsions. A still more curious fact is, that the mother of this litter died of the rabies. Without stopping to discuss the intricate question of whether this disease necessarily only results from the introduction of a specific virus, or if it may not be generated *de novo* in the system of the canine, I will merely state that a highly respectable minority advocate the latter opinion, which, if true, I must ask that this be considered a cause of spontaneous rabies.

After this somewhat lengthily, although I hope not altogether useless digression, I would call your attention to the consideration of the following statistical facts:—The wise and benevolent Dr. HOWE, in his report of the idiocy of Massachusetts, found seventeen families wherein the parents were blood relations. Of these families there were ninety-five children; of whom one was deaf, one blind, one a dwarf, twelve scrofulous,

and *forty-four idiots*. Of the eight hundred and seventy-nine such families in Ohio, there were three thousand nine hundred children, *twenty-four hundred* of whom were intellectually or physically *deformed*.

The venerable FELIX ROBERTSON, in the *Nashville (Tenn.) Medical and Surgical Journal*, No. 3, Vol. XVIII, reports an instance of the marriage of *second cousins*, whose families had been in the habit of intermarrying. As the product of this marriage there were eleven children; three of whom were physically deformed, although the parents were perfectly symmetrical. Here we have an aggregate of eight hundred and ninety-five families, consisting of four thousand children, of whom *two thousand four hundred and seventy* were either mentally or physically deformed. By a reference, we see that the number of children are not decreased, but that *three-fifths are deformed*. It is true that some of the parents were unhealthy and others intemperate; but to rebut against this is the fact, that the evil effects, like that of phthisis pulmonalis, sometimes lies dormant or inert in the first generation, to be visited with unmitigated severity in some succeeding one. But we need not dive into the uncertainties and confusing labyrinths of statistics to find evidences of its ravages. Every practitioner, let his experience be ever so limited in scope of observation or inconsiderable in extent, must have frequently met with instances, without any other ascribed cause. I myself am acquainted with several such instances, which not only possess the merit of being entirely new, but also of being marked in their application.

One family whose females have never, within the scope of the "oldest inhabitant," changed their names, but with some egotistical impression that their family name was superior to any other, have with scrupulous exactness chosen their "other halves" from their blood relations; while the members of the "stouter sex," of the same family, have with equal exactness and scrupulous faithfulness, chosen their "helpmates" by the same rule, save and except one, who by mistep of nature has been cheated out of his mate, as he seems to be an odd one: and now, woe to hymen, lives the life of single-blessedness.

This family are not only effeminate in mind and body, but some are subject to epileptic convulsion, a disease which I believe follows close on the heels of such violations. I am also acquainted with another family, of whom there are four idiots, three of the lowest grade, not even possessing the ordinary intelligence of the brute creation, while they possess all its passions in a magnified degree. About three years ago, when first commencing the study of medicine, I attended my preceptor on a visit to see a child with convulsions. Its mother, a very intelligent woman, informed us that it was her third child; that it had been idiotic ever since its birth; that it did not possess the instinct common with the lower animals; that it manifested no knowledge of its surroundings; had never walked, although three years old. It died from convulsions. And from the marked resemblance between the parents, I was subsequently induced to make inquiries, and ascertained that its parents were *cousins*.

Now, here are three instances. Of the first, I do not know of any such close intermarriages that do not develope such results. Whether the *mental deficiency* is a consequence or a cause of the marriages is more than I am prepared to answer. If it is a cause, however, it would be difficult to reconcile the physical deformities. Of the second instance, candor demands that I state that the father while, an intelligent enough man was an inveterate drinker, a perfect specimen of chronic satines. How far this influence might have went to produce the results it is impossible to determine. That it contributed a part cannot be denied, possibly all. While in the third instance, I know of no influence that would modify or restrict its full application. The parents were intelligent, not inebriate or physically deformed.

But to the consideration of the subject soberly. Should not the physician—the guardian of mankind, address himself to the reason of men, show them the magnitude of this sin; hold up the evil unstript of its horrid deformities, that they may see and appreciate the enormity of the crime, and seeing it may avoid it. A healthy offspring should be *the first* consideration. No parent is so inhuman as to mar or wish to mar the intellect-

ual or physical symmetry of his children. Yet many do do it—ignorantly do it. Any step towards the solution of this problem should be hailed with joy; and he who points out the true causes of deformity in our progress is entitled to the gratitude of every enlightened man and woman. If then consanguinity in marriage is a cause—it should be placarded at every corner until it becomes as familiar to the people as “household words;” and then, if their moral sense did not teach them to find a remedy in the avoidance of the cause, actual legislative interference should be resorted to. If it was not discountenanced socially it should be legally.

ARTICLE XVIII.

TO THE MEDICAL EXAMINER.

CAMP BEFORE CORINTH, *May* 23, 1862.

MESSRS EDITORS:—I wrote you after the battle of Shiloh, but the uncertainties of the mail render all communications dubious. Presuming, however, that you received that letter, I will not repeat. The wounded were gradually shipped on steamboats, down the river; a large number stopping at Savannah. I learn that many secondary operations of resection and amputation became necessary there—part of them because the primary operations had not been performed which the cases required. Prof. H. A. JOHNSON stopped there not long since, and contributed his services for some time to their surgical care. After the departure of the wounded the attention of the army surgeons reverted to the sick. Camp diarrhœa is here as in all armies, the chief disease; and I will endeavor to give a more clear and careful account of it than is to be found in the books of Military Surgery. Almost all men and officers have an attack of it soon after entering the field service, and probably one-third of the army has it now. Only a moderate number, however, are incapacitated for duty. To call the disease a diarrhœa is, however, almost a misnomer, and conveys a very

incomplete idea of its pathology. The alvine evacuations are but one symptom among many, and constitute but a small part of the disease. I have passed through the disorder myself and have closely observed its symptoms, both in myself and in hundreds of others. The conclusion which forces itself upon me, as well as upon other surgeons, is that nine-tenths of the sick of this army have one and the same pathological lesion, whether with or without diarrhœa, and that lesion is portal congestion. Its presence is manifested by a yellow or brown fur on the tongue; sometimes icterode skin and eyes; and almost always by deep red or yellow urine; scanty bile in the fæces; and a general tenderness of the abdomen. The ganglionic nervous system is probably affected, as both the sensations and the functions of every viscus below the diaphragm is thoroughly depraved. When the patient reaches this condition, one of two things occur: either the portal vessels partly relieve themselves by effusion into the intestines, in the form of diarrhœa or dysentery, or else, if the bowels withstand the pressure, a fever of bilious character sets in. If diarrhœa is the destined course of the symptoms, there is, coincident with the early portal congestion, a gentle looseness of the bowels for a few days, without loss of appetite or distress. About the fourth day, the irritative stage commences; the appetite fails; there are no pains in the stomach, bowels, or rectum. Often the patient vomits his food and medicine. In many instances, hemorrhoids present themselves and the diarrhœa or dysentery, as the case may be, is more frequent and profuse in its discharges. As manifested among us, the discharges from the bowels rarely become dangerous from their profuseness; hence, for the most part, we treat the cause first and regard the discharge as rather a temporary relief than an evil. In cholera time, of course all this would be changed, and the prompt suppression of the discharge would claim the earliest attention.

The treatment adopted is various; but as experience accumulates, most of the surgeons are compelled to recognize and act on the presence of the portal congestion by a free use of mercurials. I have tried opiates, astringents, cathartics, etc. abun-

dantly, to avoid the use of what appears to a Chicagoan such a frightful quantity of colomel and blue mass, but in vain. I am obliged to confess they are necessary in this climate, and I have experienced their grateful effects in my own person. It is true, however, that other remedies have a temporary effect in arresting the diarrhœa. Thus, if you begin some day and give every one of twenty patients half-an-ounce of Epsom salts, as recommended by Tripler, you will find, the next morning, a large portion of them free from all evacuations. The same will be observed if you give them full doses of opium and acetate of lead, per chloride of iron, or any other potent astringents. It will be observed in these cases, however, that the patient is not relieved of his sense of illness; on the contrary, there springs up in a few hours a greatly increased severity of abdominal pain; frequently vomiting supervenes: the tongue remains foul; and great distress is apt to occur, and continue until the diarrhœa returns, when a partial sense of relief is felt. In the form of the disease, therefore, at present prevailing, we give but little attention to the diarrhœa directly—sometimes none at all—the patient protesting that his discharges relieve him. In sthenic cases I generally give two grains of calomel, with some prepared chalk and opium, giving a dose every two, three, or four hours, according to the severity of the case. In this way, the patients gain rapid relief, both from pain, feverishness, and diarrhœa. The malarious tendency, obvious in many cases, requires the addition of quinine.

The medical supplies of the army are improved, but still very imperfect. A surgeon can get only about half the articles required in the regulation supply table for field service. Perchloride and mur. tinct. of iron, so essential in erysipelas, cannot be had at all.

We had a smart skirmish in our division on the 15th instant, in which over 30 were wounded. In consultation with the surgeons, I proposed resection as a substitute for amputation, in a number of cases of shattered bone, such as heretofore have been condemned to the latter operation, and produced my chain saw to encourage the adoption of the plan. All favored it; and

quite a furor for resection sprung up. We resected five cases: two of the middle of the shaft of the femur; two of the elbow; and one of the shoulder joint. One thigh, which had the femur shattered and the femoral artery cut, did not admit of the operation, but had to be amputated; making in all six capital operations. One of the patients with resected femur is dead; the amputated thigh will probably die also, being accompanied with great prostration. The remaining resections are doing well, and in the opinion of all here will subject the patients to much less risk than amputation. I was moved to this plan by the frightful mortality of amputations, being over 80 per cent. in cases of the thigh, and about 90 per cent. at the upper third, where half of them have to be made. Let no surgeon, however, think to escape the responsibility by splintering the limb and neglecting all operative assistance. Patients with the femur shattered by a bullet, almost all die, if not relieved by resection or amputation. Let every young military surgeon dissect the first limb amputated for gun-shot fracture which he sees, and he will see the cause of the danger. The bullet shatters the bone into fifty fragments, and drives them asunder into the surrounding flesh, almost as though a small shell had exploded in the centre of the limb. Large fragments of disorganized flesh and bone are therefore confined in the seat of injury. In a day or two, the bulging flesh closes the track of the bullet as with a tampon, so that not a particle of pus can escape. The foreign bodies produce enormous inflammation and suppuration. The pus prevented from escape burrows among all the muscles, and at length escapes at some distant point; meanwhile pain, the poison of rotting tissues, and the exhaustion of the discharges, are too much for human endurance. There is no doubt that amputation is better than this. What is claimed, however, by the advocates of resection is, that by laying the wound broadly open, and boldly removing all the fragments and sharp extremities of bone, and leaving a wide, free exit to the pus, the injury is converted into a simple and not extraordinarily dangerous wound, and that the frightful dangers of amputation are avoided. If a patient must be immediately carried a long distance in a

wagon, the resected limb would be troublesome, but this is seldom absolutely necessary. In the superior extremity resection should *always* be preferred, unless the destruction of the limb is a matter of certainty.

There is constant skirmishing along our front, but nothing of great surgical interest has transpired. We are now in daily waiting for the great fight for Corinth, which may probably be over before my next letter. Yours truly,

E. ANDREWS.

The Clinique.

MERCY HOSPITAL.

Service Prof. J. H. HOLLISTER, Attending Surgeon.

POPLITEAL ANEURISM.

Reported for the EXAMINER.

GENTLEMEN:—We have before us a case of interest for examination, demanding an immediate operation; but before proceeding with it, I propose to call your attention to the location of the tumor; the enormous size to which it has attained; and ask you, by careful manipulation, to educate your fingers to the detection of the *aneurismal thrill*. The books describe to you two kinds of aneurism, *true* and *false*, and point out with sufficient clearness the distinctive characteristics of each. They also remind you of the liabilities to a mistaken diagnosis of tumors, not aneurismal, from their proximity to, and impulse from, large arteries in immediate relation. That the tumor before us is aneurismal is evident, from the fact that when you fully control the femoral artery, not only does the *thrill* cease to be felt, but by gentle compression the tumor rapidly diminishes in size, and the walls, before tense and nearly unyielding, become soft and even flabby.

This is termed a popliteal aneurism from being developed in the popliteal space upon the popliteal artery; and this variety is of much more frequent occurrence than any other. The size

to which this has attained is very unusual. You will notice that it has borne before it and moulded itself around both the internal and external flexor tendons, and so fully occupied the popliteal space as to permit but a very limited flexion of the knee-joint.

Measured around its largest development, the limb is 18½ inches in diameter, while the other, at the corresponding point, measures only 12 inches; from above downward, the measurement of the tumor is 8 inches; while the thrill may be detected from its extreme inner to its outer margin for a distance of 12 inches. It will doubtless surprise you to notice what an impulse is given to this enormous sac, by the pulsation of the popliteal artery, and you will more fully than before comprehend the power of the heart-impulse to the circulation.

With a degree of care compatible with the patient's comfort, I desire each member of the class to study the case, noting the absence of the thrill, as with compression upon the femoral artery, you control the circulation, and the immediate subsidence of the tumor, showing that its contents—probably not less than two pints—is almost entirely fluid. While you are conducting this examination individually, and before administering the anæsthetic, I will briefly detail to you the previous history of the case.

The patient, F. G. aged 40, a native of England, 6 feet and 1 inch in height, and of spare habit, was admitted to the Hospital about a week since, having been discharged from army service, with the desire to be cured by such means as we might deem most safe, and at the same time permanent.

He has suffered severely from the constitutional effects of *sypilis*, and at the same time presents the anemia incident to the excessive use of *alcohol*. These, gentlemen, are the two fruitful causes of aneurism when not traumatic.

Fearing, as the result of ligation, the refusal of the wound to heal kindly, and the chances of secondary hemorrhage, I placed him at once upon full diet, with tonic treatment, and applied along the femoral artery, at four different points, successively, the horse-shoe tourniquet, with results which you here behold.

Although adjusted with the utmost care, to prevent unnecessary irritation, the compress could not be applied for eight hours with sufficient force to even partially control the artery, without producing, first, serous effusion, second, erysipelatous inflammation of the skin, and third, gangrene at the precise point of pressure. Unfavorable as the case really may be, there is no time to be lost; the last hope of the man depends upon the immediate ligation of the artery, for the tumor upon its lower prominence has already, by pressure, stopped the circulation in the sack and investing skin; gangrene of the central portion has already supervened; and in less than 36 hours, without ligation, the sac will doubtless be ruptured, and the hemorrhage fatal, unless controlled.

I should have remarked, with reference to the development of this aneurism, that for six months after its first appearance, up to Dec. 1, 1861, it was about the size of a filbert, with no appreciable change in size. At that time it began rapidly to enlarge, and in a few days attained to nearly its present size.

As soon as the patient is sufficiently insensible, I shall ligate the femoral, about two inches below the origin of the profunda, for the reason that the artery is here most superficial, and I desire as little as possible to increase the chances of sloughing, by reason of dissection. Before I proceed to the incision, I have to remind you of the cautions enjoined by all writers with reference to disturbing the femoral vein, with the danger of laceration or phlebitis, and also to avoid including the nerve in the ligature. Having opened the sheath of the vessels, and raised the artery alone upon the hook, armed with the ligature, I pause a moment to determine if, by proper tension, the thrill is controlled in the sac, for *sometimes* we have here duplicate arteries, and must be sure that we do not fail of our intention to starve out this tumor, by entirely withholding its supplies.

Having ligated the artery, it remains to dress the wound, secure its rest, sustain the patient, and wait, I confess with not very sanguine expectation, the development of secondary results. Among the more important of these results which we have to anticipate, are inflammation, especially of an erysipela-

tous character;—death of the limb from deficient supply of blood; and secondary hemorrhage when the ligature finally cuts through the artery. In a patient enjoying good health up to the time of the operation, it would generally be a sufficient safeguard against these anticipated evils, to place the limb in an easy relaxed position, the leg and foot being covered with warm, dry flannel; to give a full anodyne internally, to be followed by a light diet and cool drinks; and to keep the temperature of the room between 60° and 65° of Fahrenheit. But the extremely unfavorable constitutional condition of the patient before us; and especially the indications already given of a tendency to gangrenous erysipelas, make the vigilant employment of other prophylactic measures necessary. Among the most efficient agents for this purpose is the tincture of chloride of iron, given in full doses internally. Hence, in addition to the anodynes necessary to procure rest, we shall give 20 gtts. of this preparation of iron every four hours, and as much nutritious food as his stomach will bear. Owing to his previously intemperate habits, it may become necessary to resort, temporarily, to the use of alcoholic stimulants, and if so, they will be given with sweet milk, in the form of punch, that nutritious matter may accompany the stimulant into the blood. Independent of all moral considerations, however, there is a strong objection to the use of alcoholic stimulants in the treatment of aneurismal patients, either before or after an operation. You will find almost all modern authors speaking of an atheromatous or fatty degeneration of the coats of the arteries as one of the causes of spontaneous aneurisms. And such a condition of the coats of the vessel, also, adds greatly to the danger of secondary hemorrhage after the application of the ligature. Very few pathological facts are better established, than that the free use of alcoholic stimulants favors fatty degeneration in nearly all the fibrous tissues, and in none more than in the heart and larger blood-vessels. Hence, they are contra-indicated in aneurisms.

Your attention is directed thus minutely to the dangers that threaten the patient, and the means for averting them, because

the success of surgical operations often depend more on the preceding and subsequent treatment, than on the skill with which the operations are performed.

June 9, 1862.—Five weeks have now intervened since the operation. The patient was for sometime extremely prostrated, not alone from the operation, but from the gradual withdrawal of the stimulants, from the inordinate use of which, he was quite on the verge of *tremens*, when he entered the Hospital. The ligature came away the 24th day without hemorrhage, and the wound healed well. The sloughs from compression have been slow in separating, and the resulting ulcers became filled with abundant false granulations, but are now nearly healed. The slough resulting from the gangrenous spot on the under surface of the aneurismal tumor did not separate until about one week since, when a fetid sanious discharge of two or three ounces occurred.

During this period the tumor had diminished in size about one-third; but is still fluctuating, and from the nature of the discharge, we evidently have nothing to hope from the *fibrination of the clot*. Indeed, during the last three or four days the patient has become more feeble, the pulse quicker and weaker, and the countenance sunken. It is thus very evident that instead of *fibrination* and gradual contraction of the clot, it has become partially disorganized and putrid in the sac, and is exerting an injurious influence on the blood and vital properties of the patient. On examination, the opening into the sac was found to be large enough to admit the index finger, with which the clot was thoroughly broken up, and discharged to the amount of nearly eight ounces. The flabby walls of the extensive cavity thus left were supported by a bandage, and directions given to have the patient vigorously supported by quinine and iron, and the sac to be carefully washed out once a day, with a solution of one grain of chloride of zinc to the ounce of water.

June 16, 1862.—During the past week, the patient has improved rapidly in all respects. He is able to go about his room; the cavity in the popliteal space is very much diminished; and

the discharge from it is small in quantity and healthy in quality. His recovery may be considered complete.

Proceedings of Societies.

CHICAGO MEDICAL SOCIETY.—REGULAR MEETING, JUNE 6, 1862.

After the reading and approval of the minutes of the last meeting, Dr. G. PAOLI reported a case of scarlatina.

Dr. FISHER related two interesting cases of gun-shot wounds. The first, was a soldier, who in the battle of Shiloh or Pittsburg Landing, received a wound from a Minnie ball, that entered the deltoid muscle, thoroughly shattered both the neck and head of the humerus, grazed the edge of the glenoid cavity, and passed under the scapula, lodging deep in the muscles between the scapula and spine. Several days had elapsed after the wound was received before the patient came under Dr. FISHER'S care. An operation was commenced with the hope that exsection of the head of the humerus would be sufficient, but the bone was found so extensively shattered or comminuted that the operation was converted into an amputation at the shoulder-joint. The humerus showing the direction of the ball and the extent of the injury to that bone, was exhibited to the Society. Owing to the feebleness of the patient, and the absence of any indications of serious irritation at the point where the ball was lodged, no attempt was then made to extract it. Under the influence of rest, tonics, stimulants, and good diet the patient soon began to improve, and continued doing well until the wounds connected with the amputation at the shoulder had nearly healed up, and he had been taken home to his friends.

The surgeon, under whose care he then came, made an incision behind the posterior edge of the scapula and extracted the ball. Air was found to escape freely from the wound thus made; great difficulty of breathing soon followed, and the patient died.

On making a post mortem examination, it was found that the ball, in passing under the scapula, had fractured three ribs, cutting one entirely through, and wounding the surface of the lung. It was through this wound that the air escaped after the extraction of the ball, and to which the fatal result was attributable. It is remarkable that such a wound should exist several weeks, without either becoming closed up by adhesive inflammation, or allowing the air to escape both into the pleura and the external tissues sufficiently to render them emphysematous. The second case related by Dr. FISHER, was that of a soldier who, in the same battle, received a ball through the soft parts of the thigh, in such direction as to sever the femoral artery. Secondary hemorrhage occurred, which was not controlled until both ends of the artery were tied. The incisions necessary to effect the ligation of the artery also enabled him to extract the ball. The patient subsequently recovered.

PUERPERAL, PYEMIA, AND FEVER.

Dr. J. McALLISTER related two cases of what he styles puerperal pyemia. In both cases the symptoms were nearly the same. The patients appeared to be doing perfectly well until about the fourth day after confinement; when the attack was ushered in by certain striking nervous symptoms. There was no chill or abdominal pain or tenderness, but the countenance rather suddenly assumed an expression of anxiety; the mind became confused; and the patient felt as if she was being lifted from the bed and floating in the atmosphere. The acceleration of pulse and febrile heat were very moderate.

In the first case, these symptoms continued with but little change for four days, when there seemed to be a decided improvement. On the fifth day, however, a very disagreeable odor was emitted from the body of the patient, and the vaginal discharge was offensive. On the sixth day, a severe chill occurred, followed by an extremely rapid and feeble pulse, and death the following morning. The second case, presented the same train of symptoms, but reached a fatal termination on the fifth day. In neither case was there any abdominal pain, tenderness, or tympanitis. Dr. Ross stated that two cases of ordinary well

marked puerperal peritonitis had occurred in his practice recently; one of which terminated fatally on the fifth day after the attack, and the other recovered.

CANCER OF THE STOMACH.

Dr. ROSS, also presented an interesting pathological specimen, consisting of the stomach taken from a patient in the hospital, who had died after several years of illness. His chief symptoms during life were vomiting after meals and constipation, with a slow but persistent loss of flesh and strength. The lower and posterior surface of the stomach was closely adherent to the transverse part of the colon. Internally it showed an extensive scirrhus thickening and growth, extending from near the cardiac orifice over the posterior internal surface to the larger curvature. But it did not involve either the cardiac or pyloric orifices.

Dr. ERNST SCHMIDT, called the attention of the Society to the fact, that in Germany, cancer of the stomach is very much more frequent in those districts where the poorer classes make free use of a poor quality of wine—the refuse of the vintage, than in those where the same classes use lager beer as the common beverage. This, if true, would seem to show that the irritation of the stomach caused by the frequent contact of sour and inferior wine, was a positive *cause* of scirrhus.

TETANUS.

Dr. SCHMIDT, also related two cases recently occurring in his practice, of spontaneous or idiopathic tetanus. In one of them a hot bath, rendered strongly alkaline by liquor potassa, afforded very marked, though temporary relief. Both cases terminated fatally, but no post mortem examination was allowed in either.

SANITARY REPORT.

Dr. N. S. DAVIS, presented a report on the Sanitary regulations of the city, with suggestions for their improvement. This report may be found in full, with only slight alterations of phraseology, in the editorial department of this No. of the EXAMINER.

PERNICIOUS FEVER.

This being the subject for discussion was taken up and briefly

discussed by Drs. DAVIS, SCHMIDT, PAOLI, PETERSON, FISHER, C. G. SMITH, WICKERSHAM, and McALLISTER. The latter made some interesting statements in relation to the prevalence of this form of disease among the prisoners in Camp Douglas, and its connection with pneumonia.

But as a discussion of the subject will be resumed at the next meeting of the Society, we will defer our report until that time.

A VERY RARE CASE OF GUN-SHOT WOUND.

BALL PASSING IN THROUGH THE THORAX AND COMING OUT AT
THE ANUS.

Reported by CHARLES G. SMITH, M.D.

On board the steamer War Eagle, which conveyed about 400 of the soldiers wounded at the Battle of Shiloh, from Pittsburg Landing to Cincinnati, and to which steamer I was detailed by the Medical Director at Pittsburg, I found the following case:

Corporal George Hipwell, of the 15th Ill. Volunteers, had been wounded on the first day of the battle, Sunday, April 6th, 1862. The ball passed into the thorax, under the right scapula, between the fifth and sixth ribs, and disappeared. He raised a good deal of blood, he said, for three or four days after he was wounded, but whether by coughing or vomiting I could not make out from his description. When I first saw him, which was five days after the battle, he was a good deal depressed; but he began to improve gradually under a moderate use of stimulants and an improved quality of food. On Sunday, however, just one week from the time he was shot, while sitting at stool, over the pail, he suddenly jumped up, exclaiming that he had passed something strange, and found the bullet in his passage. This was testified to by the nurse, John Lindars, of the same company, who was holding him over the bucket, and who was sure that the pail was entirely empty before the patient took his seat upon it. The ball was not a Minnie, but one of

the old fashioned round ones. It was a little dented, from coming in contact with the ribs, probably.

From that time he recovered rapidly, and was doing very well when I left him in Cincinnati. I have thought the case so unusual that it would interest the Medical Society to-night, and I am happy to state that I have lately heard from the patient, and he is, at this date, June 7th, just two months from the accident, doing well, and suffering no further inconvenience from his strange wound.

Selections.

CASES OF VAGINISMUS, WITH THE METHOD OF TREATMENT.

BY J. MARION SIMS, M.D.

Reprinted from the Bulletin of the New York Academy of Medicine.

In May, 1857, I was called to see a lady, 45 years of age, who, married at 20, had been an invalid ever since. Menstruation, always painful, had just ceased. She had great irritability of the bladder, a sense of bearing down, and other symptoms of uterine derangement. But the most remarkable thing in her history was the fact that she had remained a virgin, notwithstanding a married state of a quarter of a century. Some two or three years after marriage, her physician discovered a sanguineous tubercle at the meatus urinarius, and removed it with the expectation of relieving her peculiar condition, but no benefit ensued. He then attempted to dilate the vagina with graduated bougies, which produced the most intolerable suffering without the slightest permanent improvement. She next consulted the most eminent physicians in the principal capitals of America, and visited London, Paris, and other European centres of learning, asking advice of leading surgeons, but no one could give a satisfactory solution of the case, or advised anything more than the bougie system, which had been already fruitlessly exhausted. Possessed of ample means, she and her husband had left nothing untried that promised the least hope of success. And thus many, many long years had passed when

I was sent for, not to be consulted in respect to this peculiarity, which they had long since learned to look upon as incurable, but for the state of her general health.

I found her nervous system in a deplorable condition. It was exceedingly impressible, the slightest noise causing her intense pain. She was only able to walk across the room, but did not often venture even upon this, being confined for the most of the time to her couch, where she gave herself up to unceasing intellectual effort. Her mental tension and sedentary habits were supposed to be the cause of her great nervousness.

Amongst other means of diagnosis, I proposed a vaginal examination, which she assured me was impossible, then gave me the history already related. I attempted it, however, but failed completely. The slightest touch at the mouth of the vagina produced the most intense agony, throwing her nervous system into great agitation, with general muscular spasm and shivering of the whole frame, as if with the rigors of an intermittent, while she shrieked aloud, her eyes glaring wildly, and tears rolled down her cheeks, all rendering her a pitiable object of terror and suffering. Notwithstanding all these outward involuntary evidences of physical commotion, she had moral fortitude enough to hold herself on the couch, imploring me meanwhile not to desist from my efforts while the least hope remained of finding out anything about her inexplicable condition. After pressing with all my strength for some minutes, I succeeded in introducing the index finger into the vagina, up to the second joint, but no further. The resistance to the passage was so great, and the vaginal contraction so firm, as to deaden the sensation of the finger, and thus the examination revealed only an insuperable spasm of the sphincter vaginae. Whether the vagina was defectively developed or normal, I could not determine. I candidly told her husband that I knew nothing whatever about the case, that I had never seen or heard of anything like it, and that it would be quite presumptuous in me to hazard an opinion, or hope to do anything for her, when they had consulted the ablest surgeons in the world without receiving the least information on the subject, and that I could promise nothing. However, I suggested the propriety of her going to New York for further investigation under anæsthesia. She accordingly did so, and I invited the late Dr. John W. Francis, Dr. Emmet, of the Woman's Hospital, Prof. Van Buren, and Dr. R. S. Kissam, to see her. The two last named gentlemen assumed the responsibility of the etherization, which was to me a matter of some anxiety, owing to her peculiar nervous organism. Previously

to the anæsthesia, I attempted to make a vaginal examination, when the same train of symptoms was manifested as on the former occasion. But as soon as she was fully under the influence of the ether, greatly to my surprise, I found the mouth of the vagina completely relaxed, and the vagina itself perfectly normal, not presenting the least deviation from health. It was not large, but certainly quite as well developed as it ought to be at her time of life, and under the circumstances. The uterus was retroverted, and there was a small polypoid exeresence about as large as a pea hanging from the os tincæ. This was removed, not with the expectation that it would have any influence upon her condition, but to prevent the risk of future growth.

The opinion that I gave on the case was this: that it was a spasmodic contraction of the sphincter vaginæ, resulting from an irritable condition of the nerves of the part, which I could not explain. To the question whether it were possible to effect a cure, I replied that I did not know, for the books threw no light on the subject; but that the only rational treatment appeared to me to be surgical, *i. e.* dividing the muscles and nerves of the vulval opening. They seized on the idea, and insisted on the operation, which I declined to perform, on the ground that an untried process was not justifiable on one in her position in social life, the hospital being the legitimate field for experimental observation.

I have related the case somewhat at length, to make it descriptive of the class which it represents, and I shall be glad if this learned body will allow me, in my own simple way, to continue the story of my own experience in the matter. I have nothing to say on the literature of the subject; I leave that to others.

The high intellectual endowments of this lady, her elegant culture and fine social position, as well as her long suffering, all conspired to make her case one of much thought and anxiety to me, and I could not easily dismiss it from my mind. I consulted authors, and found cases described by them of pruritis, hyperæsthesia, neuralgia, neurosis, artresia, etc. etc., all of which I had seen, but nowhere did I find any description of disease answering to the peculiarities of this case, which I naturally concluded to be unique and anomalous. But about fifteen months afterwards, Professor Pitcher, of Detroit, Michigan, sent me another case, precisely similar, except that the lady had been married for two years. She had the same instinctive dread of being touched, the same muscular contraction of the whole frame, etc., while it was utterly impossible to pass the

finger into the vagina. As the lady's husband threatened to obtain a divorce, I looked upon her case as justifying the experiment. So, fully explaining to her our ignorance on the subject, I proposed a series of experimental incisions, etc. etc., to which she readily consented. Thinking the division of the irritable spasmodic outlet to be the only rational operative procedure, I at first divided only the edges of the hymeneal membrane on each side of the fourchette. No relief ensued. After waiting for the wounds to heal, I divided the parts again at the same points, extending the incisions deeply, however, through the mucous membrane, and through some of the fibres of the sphincter muscle. This was followed by some improvement; she could bear the introduction of one finger without great pain, and could even tolerate two, but with considerable suffering. I now saw that the hymen itself was the focus of the excessive sensibility, and proposed to cut it out entirely, and afterwards to repeat the lateral incisions as before, making them deeper, and rendering the dilation permanent by the use of a properly constructed vaginal dilator. By this time the mother of the lady had come to the very just conclusion that I was *experimenting* on her daughter. I told her that it was true, and attempted to explain to her the propriety of such a course when a lawsuit and divorce were in prospective. The mother, however, was inexorable, and unfortunately removed her daughter from my care. Nevertheless, her improvement was so great that I have no doubt of her fulfilling the relation of wife under some difficulties.

The experience gained by this case was of great value to me. A few weeks afterwards, singularly enough, another case fell into my hands—the wife of a clergyman, who had been married for six years. Sexual intercourse was impossible. Several surgeons had been consulted, without receiving any explanation of the case, and, of course, without relief. On examination, I discovered a sanguineous, mucous, irritable tumor at the mouth of the meatus urinarius, and notwithstanding the experiments already related, persuaded myself that this tubercle was the cause of all the trouble. The tumor was removed and its seat cauterized. In due time, she returned home, but came back in a few days, to report a persistent state of virginity. On a more minute examination, I found the case to be, in all particulars, precisely like those previously related, but not quite so intense in its manifestations. The slightest touch at the reduplication of the hymeneal membrane with a feather or a camel's hair pencil, produced as severe suffering as if she were cut with a knife.

While this lady was under treatment (April, 1859), a fourth

case came under my observation. The lady had been married three years. Sexual intercourse had been imperfectly accomplished a few times during the first few weeks after marriage. She innocently supposed that all women had to suffer as she did, and tried to bear it like a good Christian, but her sufferings were so intense that she at last looked with the greatest terror on the approaches of her husband, to whom she was devotedly attached. At her earnest entreaties, her husband, who was equally devoted to his wife, ceased all efforts at sexual intercourse, and they lived and loved as innocently as two little children. But at length the mother of the poor timid girl began to wonder why, after three years of marriage, her daughter, who seemed to be healthy, and who had a healthy, vigorous, young husband, had not become pregnant, and ventured to speak of her disappointment in not being advanced to the honorable title of grandmother. Upon this, the daughter hesitatingly explained the whole to the mother, who immediately brought her to me. I found precisely the same condition of things as already described.

Three weeks after this, my friend, Dr. Harris, of E. 30th st., New York, brought me another (the fifth) case. The patient had been married two and a half years, and, in consequence of her persistent virginity, her husband was truly unhappy. I had now (June, 1859) three cases under observation at the same time. To cut short this long narrative, I will simply say that after many experiments and disappointments, all were perfectly cured in August, 1859.

From personal observation, I confidently assert that I know of no disease capable of producing so much unhappiness to both parties to the marriage contract, and I am happy to state that I know of no serious trouble that can be so easily, so safely, and so certainly cured. I now venture, with the approbation of this learned body, to give this affection a name as well as a remedy.

By the term *Blepharismus* or *Blepharospasmus*, we mean an involuntary, painful, spasmodic contraction of the orbicularis palpebrarum, with great supersensitiveness or intolerance of light. By the term *Laryngismus*, we mean a spasmodic contraction of the rima glottidis, with stridulous inspiration. And by the term *Vaginismus*, I propose to designate an involuntary, spasmodic closure of the mouth of the vagina, attended with such excessive supersensitiveness as to form a complete barrier to coition. These various affections may or may not be complicated with inflammation, but do not necessarily depend upon it. We may have vesical tenesmus without inflammation of the bladder, and rectal tenesmus without rectitis. The most perfect ex-

amples of Vaginismus that I have ever seen have been uncomplicated with inflammation; but I have met with cases in which a slight redness or erythema was visible at the fourchette, just without the reduplication of the vaginal mucous membrane, called the hymen. Usually, the hymen is thick and voluminous, and, when the finger is passed into the vagina, its free border often feels as resistant as if bound by a fine cord or wire; but it may also be firm and unyielding, with even the wire-feeling free border, without symptoms of Vaginismus. There need be no mistake in diagnosis. It can be confounded only with impermeable hymen or with atresia. In each of these, marriage may have existed without consummation, but the true cause becomes patent on investigation.

In a case of Vaginismus, the gentlest touch with the finger, a probe, or even a feather, produces the most excruciating agony. The sensitiveness is at all parts of the vaginal outlet, is very great at the meatus urinarius, and on each side of it, just where the hymen takes its origin; is greater still on the vulval or outer face of the hymen, near the orifice of the vulvo-vaginal gland, and greatest at the sulcus or reduplication from the vulval orifice. Often, the most sensitive point of all is at the fourchette, where the hymen projects upwards. I have often heard patients shriek with terror and agony, exclaiming that I was thrusting a dagger into the body, when I merely touched the sensitive points with a camel's hair pencil or a soft feather; and, again, these same patients have declared that they felt comparatively nothing when I have had the parts held asunder, so as to pass a probe into the vagina, making a forcible pressure against the internal or vaginal surface of the hymen, thus proving that, while the outer face of the hymen was supersensitive, its inner surface was normal. In all cases, the mere spasm of the sphincter is painful, and in many cases the sphincter can feel almost as hard as a ball of ivory. Indeed, one of my patients supposed it to be a tumor to be cut out before she could be cured. The spasm of the sphincter is pathognomonic of the disease; the supersensitiveness, diagnostic. The fact is more delicately shown by touching the outer surface of the hymen, particularly at its reduplication, with a soft camel's hair pencil.

Treatment.—I shall not detain you with a rehearsal of the steps by which the proper treatment was finally determined: enough has been said already to show that it was not accidental, as my observations extended from May, 1857, to August, 1859. The treatment consists in the removal of the hymen, the incision of the vaginal orifice, and subsequent dilatation. The last

is utterly useless without the others, but is essential to easy and perfect success with them.

I usually make two operations, though all may be done in one. Placing the patient, etherized, on the left side, I seize the hymeneal membrane with a pair of forceps, just at its junction with the urethra on the left side, and, putting it on the stretch, clip it with properly curved scissors till the whole of it is removed in one continuous piece. In some cases the hæmorrhage is sufficient to require a compress of lint, thrust into the mouth of the vagina, while in others it is unimportant. In two instances the bleeding was excessive, but was easily controlled by the liquor ferri persulphatis. The cut usually heals in three or four days, after which the operation for radical cure may be performed.

Notwithstanding the removal of the thick, sensitive hymen, the citatrix marking the original place at the mouth of the vagina, is excessively sensitive, and, in some instances, feels hard and tense, as if a small cord were constricting the outlet. This I formerly divided at different points, and in divers ways, during the course of my experiments, and finally arrived at the following method as being the surest and best:—

Place the patient, fully etherized, on the back, as in the position for lithotomy, pass the index and middle fingers of the left hand into the vagina, separate them laterally so as to open the vagina as widely as possible, putting the fourchette well on the stretch. Then make a deep cut with a common scalpel through the vaginal tissue on the right of the mesial line, bringing it from above downwards, and terminating at the raphe of the perineum.

This cut forms one side, the left, $a b$, of a . Then

pass the knife again into the vagina, still dilating with the fingers as before, and cut in like manner on the opposite side from above downwards, uniting the two incisions at the raphe, as shown by the line $d b$, which is to be extended quite to the perineal integument, and through its upper border, as shown by the dotted line $b c$. Each cut will be nearly two inches long, extending from about half-an-inch above the upper border of the sphincter vaginae, across the sphincter for about half-an-inch, and down to the perineal raphe for nearly an inch more. Of course, this will vary in different subjects, according to the development of tissue in each. To perfect the cure, the patient will wear for a time a properly adapted vaginal dilator. I use an instrument usually made of glass, sometimes of silver, or other metal

silvered or gilt. I prefer glass, because it is cheap and easily kept clean, while being transparent, it is easy to see how the wound is progressing without removing the instrument. Moreover, some patients have insisted that a glass instrument is more comfortable and less irritating than one of metal. I am not prepared to say whether this be true, yet there may be both truth and philosophy in the assertion, as one substance is the worst conductor of heat, and the other among the best. The dilator is sometimes introduced as soon as the operation is finished, especially if there be much hæmorrhage, which always ceases immediately in consequence of the pressure of the instrument. But most generally I do not order it for 24 hours after the operation, when it is worn two, three, or four hours. Its introduction is attended with a sense of soreness, but with none of the peculiar, agonizing suffering, characteristic of the original disease. The instrument is usually worn for two hours in the morning, and two or three hours in the evening, more or less, according to the tolerance of the patient. I have been often astonished at the rapidity with which the cuts heal, the process being seemingly facilitated by the pressure of the glass dilator, which is to be worn daily for two or three hours, or until the parts being entirely cured, and all sensitiveness removed, the patient may be pronounced competent to fulfil comfortably and pleasantly the duty of a wife.

The dilator is about three inches long, sometimes a little more, slightly conical, open at one end and closed at the other, and of different sizes, varying from an inch to an inch and a half in diameter. At the largest part, near the outer extremity, there is a depression on one side for the urethra and neck of the bladder. It is open at the outer end, to allow the pressure of the atmosphere to hold it in the vagina, which it does very effectively. When closed at both ends, a T bandage is necessary, and the instrument often slips. I found that a perfectly round cylinder, on being worn for three or four hours, always irritated the urethra and neck of the bladder; hence, the urethral depression on one side, which also materially aids its self-retaining power.

This disease is by no means rare. Dr. Emmet and myself saw seventeen cases in twenty-four months. Of these, one had been married thirty years; one, fifteen years; one, thirteen years; one, seven years; one, six years; three, three years; and so on down to two years. Of these, fifteen had been treated, all of whom were cured. Three have become mothers—one conceiving in two months after her cure, one in four months,

and another in twenty months—and I have no doubt that many more will become mothers in due course of time. In most of them, sexual intercourse had never been accomplished; in two, it had been done a few times very imperfectly, then suspended altogether; while in two others it had been indulged in under the most trying circumstances, and always with dreadful suffering to the wife, and in these there was the most complete wreck of the nerves, if such an expression may be allowed. All were married but one. In this case, the affection was not discovered until her physician made an effort to find out something about the state of her womb, as she was suffering greatly from dysmenorrhœa. He then sent her to me, supposing that she had atresia vaginæ. The vaginismus was cured to two or three weeks, after which the patient returned to her physician for treatment of her dysmenorrhœa.

It must not be for a moment supposed that I arrogate to myself the discovery or description of a new disease. I do not, for it has been encountered for all time. I claim only to have separated Vaginismus from a great class in which it had been obscurely hidden away. Others have met it before. Some have called it neurosis; but this is a generic term, which may be applied to any painful affection, uncomplicated with inflammation. Many have called it neuralgia; but this term is wholly inapplicable, for it has none of its habitudes. Neuralgia is supposed to be a painful affection usually in the course of a nerve, coming when it pleases, remaining as long as it pleases, and disappearing when it pleases, but usually observing a particular cycle of time in its advent, its culmination, and its decline. Let it once leave and it cannot be recalled at will; but vaginismus can be provoked at any moment by the gentlest touch, ceasing immediately on removing the irritating cause, never returning spontaneously, and never returning at all except under the same mechanical agency. Time will show that this is not the only disease where our ignorance is covered over by the broad mantle of neuralgia. Some have called it hyperæsthesia, but this is only another phase of neuralgia—a thing that is here to-day and gone to-morrow, and is most generally symptomatic of some other affection. I call it Vaginismus, because it is not only a symptom but a conglomeration of symptoms, constituting a distinct and separate disease, with as good a right to a proper name as any disease enumerated in our nosology.

If, by the invariable uniformity of symptoms, if by the frightful amount of physical, moral, and social suffering which it always engenders, or, better still, if, by the certainty, facility,

and safety of its treatment, a disease be entitled to a particular name and special study, then must Vaginismus be hereafter recognised whenever seen, and cured whenever treated.—*American Medical Times*.

CANTHARIDES AS A THERAPEUTICAL AGENT, INTERNALLY ADMINISTERED IN LARGE DOSES.

ITS MODE OF OPERATION.

By ALEX. McBRIDE, M.D., SURGEON O.V., U.S.A.

The profession do not seem to be aware that they have in cantharides an agent the most powerful to rekindle the waning spark of vitality—an agent which, in many cases of disease, at an almost hopeless stage, will rally the shattered and almost dissipated vital forces, concentrate and generalize their action, and re-establish that series of atomic changes upon which vital action depends.

Cantharides has been used for a long time chiefly as a vesicatory, and for a few specialties, such as the treatment of leucorrhœa and incontinence of urine, some hopeless cases of dropsy, involuntary seminal emission, etc.; but I am not aware that it has ever been used in every-day practice, to accomplish those changes of pathological condition which we every day seek to effect by alteratives, tonics, stimulants, and vesicatories.

Old authors, and perhaps some recent ones, have spoken of the “blistering stage” of disease, and insisted on it as something definite; and I have no doubt many have understood it practically; but it does not appear to have ever become generally understood so clearly as to be matter of every-day observation in practice. Neither has the *modus operandi* of the action of a blister ever been, so far as I have read, clearly explained. Dr. R. Trask, of Strongville, O., a shrewd practitioner of much experience, remarked to me, several years ago, that he had no recollection of any case doing badly where blistering produced strangury. Since that time my observation, which has been considerable, justifies his remark, that strangury in blistering is a good symptom. What shall we say, then, to those writers who have proposed means to prevent this effect of epipasties?

In the autumn of 1854, typhoid fever and common continued fever prevailed to considerable extent in some of the Northern portions of Ohio. During that season I was called in frequently

to see patients in whom congestion of the lungs had supervened at an advanced stage of the fever. In those cases, where any hopes from remedial agents remained, I ordered the application of emplastr. canthar., with the view of producing revulsive and derivative action. The success was excellent in many cases; and it was at this time I made what has since appeared to me an important observation, which was this: In those cases which were at all remediable, the abatement of bad symptoms began within 30 minutes after the application of the plasters. When I first observed this in a single case, I naturally suspected it might be a coincidence; but further observation satisfied me that the same resulted in every case where blistering was imperatively demanded, and where the amount of plaster applied was large. Now, what did this prove? Certainly not that vesication was the cause of the improvement or change of pathological condition, for vesication with the best of plaster seldom occurs under four hours in adults,—even redness is not induced in much less time than three hours. Then it must prove that the effect either results from the plaster acting as a poultice to warm and shield the air from a part, or from absorption of the ingredients of the plaster. And what ingredient would more probably produce the effect than the cantharides?

The hint was sufficient, and I resolved to try the effect of cantharides administered generally, instead of topically, in certain cases which might present themselves. However, I did not put this resolution in practice till more than two years afterwards; for I was in poor health and much out of practice for that length of time. I will mention now a few cases from memory, as they occur to me.

The first case in which I made the trial direct was a feeble woman, aged about 50. She at the time had had obscure remittent fever nearly two months, which had resisted all remedies; she was quite delicate, and could endure but little medicine of any kind; she had enlarged spleen, and every few days had a “sinking” chill, each one reduced her lower than the preceding. On the occasion of the last recurrence of chill, which really prostrated her very low, I was called in during the chill. Pulse small, frequent, and feeble. Gave M. xl. cinet. cantharides (this for her was a large dose, for she could not endure much medicine of any kind generally.) In about 15 minutes she was quite rallied. Improved rapidly, and recovered from that day, without another chill.

Capt. J. P., aged 54, slim man, who had used much mercury years before. He now followed the trade of a tinner; troubled

much with constipation and numbness of one leg. On the — day of October, felt chilly about 10 o'clock; about the same hour, received news of the death of a son, absent from home; about noon, was seized with unconsciousness, and a persistent loquacity or jabbering, in which condition I found him about 1 o'clock P.M. He lay on the bed without moving hands or feet, face red, eyes natural, pulse moderately frequent, and constantly talking in a natural tone, but forming no complete words, and quite unconscious of all that was said to him. It was not clear whether this was the paroxysm of an intermittent, or a shock to the nervous system, occasioned by the sad intelligence, or both; but whether either or both, it seemed to bode evil to an individual who had for a long time had partial palsy and constipation. Ordered: *R* Tinct. cantharides, aqua camph., aa fl $\overline{5}$ j. *M*. Dose, three drachms at once, and repeat two drachms every hour.

After he had taken the third dose, the anomalous symptoms entirely abated, and he took no more of the medicine. In the evening, gave a dose of camp. and carb. ammoniæ, after which he vomited freely; slept good; and next day was quite well; and continued as well as usual thereafter. There was no strangury in either of these cases.

In February, 1859, was called to see a boy aged 15; had been ailing several days; seemed unconscious, or at least to have no volition or speech; tongue white and slimy, pupils dilated, pulse irregular, from 80 to 90; voided scantily heavy urine, took no food or drink, and submitted passively to whatever was done to or for him. Practiced scarifying and cupping, on this and the following day, to the nape of the neck. Prescription: *R* Tinct. cantharides, q. s. Dose *M*. xl. every four hours. Also, *R* Iod. potass., grs. iv.—this dose very four hours: the two medicines to be given every two hours alternately. These doses were continued four days, though on the fourth the dose of cantharides was reduced to about 25 drops. The urine on the second day was copious and dark, and continued so, gradually growing of a lighter quality, till on the fifth it was full light, healthy color, when the cantharides was discontinued entirely. The boy was now quite rational, pupils natural, pulse regular—72. In this case there was very slight sensation with urinating.

I now refer the readers of the *Lancet* to a case mentioned in an article contributed by myself, entitled "Quinine in Pneumonia," and published in the August number of 1861, in which three large fly plasters were applied at once, and a fluid drachm of tinct. cantharides administered at the same time, and repeated

in a forty-minim dose an hour afterwards, and half-drachm doses continued thereafter, at longer intervals,—all this with the happiest results, in an extreme state of typhoid pneumonia. There was no strangury in this case.

In a case of gangrenous erysipelas, where the life seemed to hang upon a thread, as the lungs were becoming engorged, a fluid drachm was given, and half-drachm doses continued for four days thereafter, with happy results, and no strangury. Other medicines were given in this case, such as quinine and tinct. ferri chlorid.; but no medicine made the visible impression at every dose as did the tinct. cantharides.

A case of animal poisoning in the month of August, 1861: a stout German laborer, aged about 40, had skinned a cow, which had died of some kind of epidemic, about five days previous to my visit. Felt poorly the next day after the skinning, and on the third day was quite unwell, and employed a disciple of Hahnemann, who attended him up to the time of my being called. Both arms were swollen and doughy, with numerous large, hard and prominent bluish vesications, from the size of a dime-piece to that of the palm of the hand nearly, dispersed on the fingers and arms, and the axillary glands swollen very much. There was at this time an anxious expression of countenance and difficulty of breathing, the skin dusky, and the rales in the lungs indicated a rapidly maturing congestion. It did not appear in this case that the specific (as I have sometimes thought it to be) for animal poison—caustic ammonia—would be sufficient to ward off the termination which appeared so imminent; the case demanded some remedy to act at once on the almost paralyzed capillaries, to restore their tone and rapidly eliminate effete matter. And what should that remedy be to turn the tide of life at this critical moment? Cantharides? Yes. I gave the tincture in $\text{fl}\overline{5}$ iss. doses, in conjunction with a suitable quantity of aqua ammoniæ. This quantity of cantharides was not repeated more than three times in the space of three or four hours. It was afterwards given in smaller doses and at longer intervals; quinine was also given after the full action of the cantharides was effected. I never saw what appeared to be a fatal tendency of disease more quickly and completely averted. I mean to say, the rapidly progressing congestion and death by sedative action were averted, and a case which appeared hopeless transformed to a hopeful one. Recovery was rapid under the use of ammonia and quinine, and iodine locally. There was no strangury in this case.

Now, some may say it was the caustic ammonia that did the

business in this case. I have no doubt that caustic ammonia did as much in this case as it will in any case where there is so much to be done; but I by no means believe that the few drops of that medicine revolutionized the tendency of the accumulated evils, for the evolution was so precisely like what I have seen result from the administration of cantharides in so many instances.

—The following case will illustrate the anodyne or sedative effect of cantharides:—

Dr. R. Trask, of Strongsville, Ohio, to whom I had communicated my views of cantharides, was called in the night, about the 1st of last May, to see a young woman, about 16 years old. This girl was quite reduced in strength by hard labor, and had her spirits prostrated by family reverses; she had had leucorrhœa badly. At this time her appearance was quite alarming, her respiration was 75 per minute, and the pulse very frequent, but not in proportion to the frequency of respiration. The Dr. considered the case hysterical, in which, I have no doubt, he was right, and gave her some of the usual remedies, and lay down and slept three hours; when, on rising, he found his patient quite unchanged; he then gave her tinct. canth. fl5 j., and ordered M. xl. to be given in about two hours in case there was no improvement. When he saw her again, at the end of four hours, the frequency of respiration was reduced to below 50 per minute. The medicine was continued in a smaller dose for some days afterward, in conjunction with iron. There was no strangury until the diminished dose was continued, as is usually done in leucorrhœa.

In the summer of 1860, A. C., an Irish laborer, of spare habit of body, and rather fond of whisky, had been sick a week with bilious fever, and was comatose—medicine having produced but little effect upon him. A friend called to see him on very important business, and tried for half an hour to arouse his attention, but failed to elicit recognition, although the business was very important. I gave the patient at this stage, pulv. camph., grs. iv., tinct. canth. fl5 j. In twenty minutes patient aroused without solicitation, recognized his friend, extended his hand and spoke to him, and was able to converse sensibly.

I might quote many more cases, but let these suffice. I have given it in large doses in low stages of typhoid fever, in engorgement of the lungs, and, as will be seen above, in congestion or dropsy of the brain; in spasmodic diseases, and in very atonic cases of intermittent. I have also given it in cholera, of which I treated some cases in 1860, or cases which were no way dis-

tinguishable from cholera. One of these cases particularly went through the severe stages of cholera, with the characteristic purging and vomiting, cramps and blue surface, with parboiled hands. In this extreme condition, I gave him largely of the tinct. canth., and no other active medicine. Of course, I applied external warmth and gave warm drinks. Improvement was speedy after the medicine. No strangury.*

The reader is, no doubt, impatient to ask, "Why does not strangury result?" I might ask in reply, "Why should it?" I know that in cases where its peculiar action is plainly and clearly indicated the large doses may be given without strangury, and with the most happy results. In cases where it is not indicated strangury will result from one fluid drachm, generally.

When is cantharides indicated in the large dose? It is indicated at that very stage of disease which authors have pointed out as the "blistering stage." This will be the indication for it generally, and if the stage is properly marked, it will seldom fail of doing good, which will generally be perceived in 15 or 20 minutes after the dose is taken.

I by no means wish it understood that I disparage blistering. I have no argument against the revulsive or derivative action of vesication. I have seen much good result from the counter-irritation of epispastics and sinapisms. It will be seen by the context that I have used both the external and internal application of the fly in urgent cases. But there are some extreme cases of disease in which, if we should wait for the absorption of the cantharadin through the skin, when vitality and blood have almost forsaken the surface, the patient would sink beyond our reach. It is in this condition of lost vitality of the surface that the internal large dose of the fly displays its power to the most advantage.

I have, on several occasions, during my service in the army, laid on large blister plasters, for the purpose of securing a large amount of absorption of the fly, when I had not at hand preparations for internal use. The result was similar, but slower; but in some cases where the skin had lost much of its function the absorption was too feeble to benefit.

It is also indicated in several other states of disease in which blistering has not generally been looked to as important, viz.: A patient laboring under a disease of the heart, by a mistake in a prescription, had taken mercury till he was profusely sali-

* I use the officinal tincture, and have it carefully prepared under my own inspection. I prefer this to the powder, as being more active.

vated, with immense swelling of the tongue and whole region of the mouth. Alarming prostration ensued, and death by syncope or anæsthesia seemed imminent; he was unable to speak, and insensible. Tinct. cantharides was given in drachm doses and repeated often; he soon rallied, and in a few hours (five or six) the swelling had disappeared, and the tissues were restored to the elasticity—by which I mean that the prostration was reversed and followed by a tonic condition. This was a striking illustration; for in the morning the man was a disfigured and dying mass, and before the evening his features were quite natural and but little swollen.

But there should be established a general indication for giving so potent a remedy, and I think the following is the true one:—

When in atonie, asthenie or adynamic disease it is a desideratum, from whatever cause, to produce general or local capillary tonicities, the internal use of cantharides will be indicated, and in quantity proportioned to the urgency of the demand.

As an easy rule for the indication of cantharides, it may be stated thus: When turpentine is indicated to produce general action, cantharides is also still more indicated, if the indication is urgent; but they should not both be given.

One fluid drachm will generally be sufficient for a dose, but I would not hesitate to double this quantity in extreme cases: but, of course, these large doses need not be often repeated. I have seldom given over fl5 iss. at a dose, with repetition of smaller doses from one to two hours after. The effect will be manifest in 20 minutes or less from the time of administration. The repetition of such doses should not be trusted to other judgments than those of the prescriber; for it is too potent a medicine to trifle with, and no more should be given than sufficient to accomplish the object, which will be definitely manifest by the improvement of the general symptoms, and the lowered frequency of pulse.*

I have no doubt this medicine is as potent for mischief as for good, if given too largely, or in very large doses on improper or false indications. In one respect it is like mercury—it will not fail to accomplish something, given in however large or small a dose. I have suggested that it acts by re-establishing the series of atomic changes upon which vital action depends; it is important that the atomic changes be not urged beyond a point of endurance, for then the tendency would be to destroy.

* I here advise whoever prescribes this medicine upon such indication as that pointed out above, to give the full dose, for it is the large dose, from forty minims to two drachms, that performs the great evolutions that I have described.

I have more than once seen life rekindled when the spark had almost gone out—when the Rubicon was passed; and the machinery kept in motion and reason upon her throne for many hours, and in a few cases for several days, by the action of this medicine, establishing an artificial life by continuing the atomic changes from which vital force is derived.

It appears to me that the cantharides acts primarily upon the capillaries by inducing tonicity, and in congestion diminishing their calibre, whereby the congestion is relieved; also vigorous absorption and secretion is promoted thereby. I am not certain whether there is any direct action of cantharides upon the kidneys. It appears that by the action of cantharides upon the general constituents of the entire organism a large amount of nitrogenized effete matter is thrown into the circulation which the kidneys rapidly elaborate into urine, whereby the quantity of dense urine is increased. This view is strengthened by the fact that as long as the urine continues to be dense or much colored, there will be no strangury, and no symptoms of irritation or excitement produced by the medicine; but when the urine becomes pale, the quantity grows less, and if the medicine is then continued, crethism results, also strangury. Hence we derive this rule: *Cantharides may be given in free doses (in cases where indicated) as long as the urine continues of a darker color than pale amber.*

I can not state how the urine is effeted, or how the kidneys are acted upon, in those cases where it is given purely as a diuretic in ascites and anasarca, not having had experience in prescribing it for such cases; but I am well convinced that if it could be borne in large dose in anasarca without exciting strangury, it would give a tonicity to the capillaries sufficient to discharge the fluids rapidly.

Besides this general action of cantharides, it seems to have a local action, as its effect in leucorrhœa, gleet, involuntary seminal emission and incontinence of urine is well known. But whether it really has this supposed local action, or operates by a general restoration of the capillary system, I am uncertain, notwithstanding I have successfully treated these various affections with it.

From the fact that strangury is not excited so long as the urine is copious and heavy, and that the quantity discharged is diminished after the color has disappeared—that is, after the proper effete atoms of the systems are discharged,—it appears not improbable that the irritation of the urinary passages is excited by crude and imperfectly decomposed atoms of the tissues

of the body, or detritus which is not ready for elaboration into urine, brought in contact with their surfaces by the powerful decomposing action of the medicine. In confirmation of this view I submit the analogous fact, that the liver and the other glands become unduly excited after the full and proper action of mercury on the tissues and blood at large; and when there is not much naseent effete matter in the system these glands become excited the sooner.

Of its supposed aphrodisiac action I have seen no evidence whatever, notwithstanding I have watched closely for it. If it ever does excite any such action, it must be on persons laboring under no particular disease, or by a restoration of the lost tone in the worn out lecher. As it spends its force upon the effete atoms of the azotized constituents of the body, I can readily conceive the erethism which might be produced by it, in large doses, on an organism not having any such material for it to operate upon.

Now, in conclusion, I wish to say that I have written the foregoing facts because they are true, and ought to be known to the profession; and for the few conjectures submitted I ask your indulgence till they are further considered.—*Cincinnati Lancet and Observer*.

PARACENTESIS IN HYDROTHORAX.

Trousseau frequently resorts to the use of paracentesis in cases of effusion into the chest, and has met with considerable success in this operation. During the past winter, he has had several cases of this nature, some of whom succumbed before the progress of the malady, while others recovered. He even ventures to puncture the pericardium. In a case of heart disease which he had a short time ago, he entertained the idea of performing the operation, but was fortunately, from some concomitant circumstances, prevented from carrying his intention into execution, for, upon making the post mortem examination, the amount of effusion was found to be very trifling. He has at present a case in the wards, of a boy whose chest was punctured for a pleuritic effusion, and who is now doing so well that in a few days he will be dismissed. The following is a short sketch of rather an interesting case, in which paracentesis thoracis was resorted to, but in this instance only as a palliative. A young woman, aged 22, was admitted on the 25th of February.

She had been delivered at the Maternity Hospital on the 14th of the same month, under the influence of chloroform, the labor having been severe and tedious. Eight days after her confinement, she returned home, but was compelled, on the above date, to seek admission into the Hotel Dieu, for a cold which she had caught in consequence of imprudent exposure. On admission, she appeared to be very anæmic, a bruit was audible in the vessels of the neck, both arterial and venous, and under the microscope the blood showed numerous isolated large white corpuscles. During the evening and night of this day, she experienced severe and prolonged rigors, with considerable oppression of breathing, pulse weak and 108 per minute, tongue coated, with thirst, loss of appetite, and constipation. On the 28th, there was a repetition of the shivering, and she complained of pain in the right breast, which was much swollen, as was also the left; this was attributed to suppression of the lacteal secretion, her child having been sent to the depot, where it died of convulsions shortly afterwards. In the evening, she was suddenly seized with a most violent and excruciating pain in the right side, and at the same time, the respiration became very laborious. She was ordered sinapisms, hot fomentations, and applications of chloroform. On the 1st of March, the breast was still swollen and painful; the pulse 140 per minute, oppression of breathing considerable, and anxiety of countenance very marked. There was great pain on the slightest pressure being made on the thorax; there was also dulness at the lower part of the right side of the chest, with large mucous rales, but neither vesicular breathing nor ægophony was audible. On the 2d of March, at the upper part of the right chest, there was heard loud tympanitic resonance, with amphoric breathing and metallic succussion sound, but no vesicular murmur; at the lower part of the same side there was dulness with distant mucous rales; and the left side was normal. There was a very trifling expectoration of saffron-colored viscous phlegm; no history of a tuberculous tendency could be elicited. The diagnosis given was circumscribed pneumonia, and metastatic abscess from puerperal pyæmia, perforation of the lung, and, as a consequence, hydro-pneumo-thorax. Ordered subcutaneous injections of solution of atropine night and morning, with administration of mercury and digitalis. On the 3d of March, these symptoms continued; there was marked prominence of the upper part of the right chest anteriorly, and the respiration was entirely performed by the left side; gums slightly swollen. Ordered to suspend the calomel, to continue the digitalis, and to apply chloroform lini-

ments. On the 4th, the patient's condition had become so alarming, from the extreme exhaustion and the oppression of breathing, that it was deemed necessary to perform paracentesis, which was done by entering a trocar between the seventh and eighth ribs, and drawing off a quantity of horribly foetid, sero-purulent fluid. The proceeding afforded immense relief to the patient. A gum-elastic sound was retained in the aperture, in order to keep it permanent. On several subsequent occasions more of the same kind of fluid was withdrawn, and injections of a strong alcoholic solution of iodine and iodide of potassium were made, without producing much pain. Up to the 6th of March, four *litres* (French) had been withdrawn, ameliorating in a marked degree the condition of the patient. On the 7th, diarrhœa had set in, with great anxiety and oppression, the pulse was 158 per minute and very feeble, and in the chest a faint transmitted respiratory murmur was audible. The succession sound was diminished, but there was still great metallic tinkling posteriorly, and the thorax had commenced to contract. The iodine injections were continued, and chalk and bismuth ordered. After this the patient gradually sank, and expired on the 13th. The post mortem examination gave the following results:—perforation of the summit of the right lung, with circumscribed pneumonia and purulent deposit; the pleural cavity lined with a thick false membrane in a state of putrefaction; no tubercles in the lung; uterus healthy, except some deep engorgement of the os and cervix; no pus found in the cavity or structure of either uterus or Fallopian tubes.—*Paris Correspondence of the Edinburgh Medical Journal.*

MARRIAGES OF CONSANGUINITY.

Dr. Devay, Professor of Clinical Medicine at the Medical School of Lyons, has just published an interesting work on the disastrous effects of marriages among relations. He shows that in fixing certain prohibited degrees of consanguinity, the Church in point of fact was only favoring the observance of one of the most important laws of nature, the infringement of which is punished with inevitable degeneracy. Unions within the limits of consanguinity are hurtful not only to the human race, but also to animals. It is true that such unions among the latter are promoted by the breeder for profit's sake—the Disley and Durham oxen, so admirable in the eyes of the breeder, are in-

stances of this; but sterility is the usual consequence of the practice. In the human race two circumstances have contributed to favor marriages among relations—the first occurs when a small population is pent up in some remote hamlet not easily accessible. The second case is that of families desirous of maintaining their rank in society, or preventing the dispersion of their fortune by marrying within their own circle. Dr. Devay states that out of 121 marriages of this kind observed by him, 22 were barren. Only 4 of the number were marriages between uncles and grand-nieces—the others were between cousins or the issues of cousins. When sterility does not occur, the issue is diseased, or afflicted with blindness or deafness; also in many cases afflicted with irregularity of conformation. Of all these irregularities, polydactylism, or multiplicity of fingers, is the most frequent. Dr. Devay has observed this in 17 out of the 121 cases above mentioned. He states that in a certain secluded spot, where the inhabitants had no communication with other populations, polydactylism had become quite endemic, and that this strange anomaly disappeared some time after a new road had been cut through the place.—*Paris Correspondence of British American Medical Journal*.

ARSENIC AND SESQUICARBONATE OF AMMONIA IN AGUE. BY EDWARD ADAMSON, M.D. Edin.

As a substitute for the preparations of *cinchona* in the treatment of ague, I doubt if there be any remedy more efficacious and trustworthy than the combined use of sesquicarbonate of ammonia and liquor arsenicalis. In ten cases, all adult males, treated solely with this remedy, it proved uniformly successful. Thus: in one case only—a quotidian—was its administration followed by two paroxysms; in seven other cases (one quotidian and six quartan) only one paroxysm subsequently recurred; and not one in the remaining two cases (one tertian and one quartan). As yet I have had opportunity of using these combined drugs in only two other cases of adult males; but, as both these cases had long resisted quinine, though readily yielding to the ammonia and arsenic, I do not include them in the above list. The quantity of the sesquicarbonate usually given was five grains, dissolved in one ounce of water, with the addition of five minims of liquor arsenicalis; this dose being repeated *every two* or *every three hours*, according to the frequency of the paroxysms. In

no case did any inconvenience result, save some degree of griping in one patient, in whom, as well as in three others, there was slight itching about the eyelids, and this was not spontaneously complained of but in two cases. Doubtless the real antiperiodic power is to be ascribed to the arsenic, which the sesquicarbonate, while exaggerating perhaps its efficacy, renders more easily tolerated by the system.—*Edinburgh Medical Journal*.

Book Notices.

A Manual of Medical Diagnosis: Being an Analysis of the Signs and Symptoms of Disease. By A. W. BARCLAY, M.D., Cantab. & Edin.; Fellow of the Royal College of Physicians; Assistant Physician to St. George's Hospital, &c., &c. Philadelphia: BLANCHARD & LEA. 1862.

This is an octavo volume of 451 pages, published in good style and on fair type. The first edition has been long enough before the profession to have its merits well known; and the early appearance of a second edition is very good evidence that its merits are appreciated. The nature and objects of the work are clearly indicated in the title. It embraces a pretty full consideration of the signs and symptoms of disease, with special reference to their bearing on diagnosis. It is a work of real value, both to the student and the practitioner. For sale by W. B. Keen & Co. of this city.

Researches and Observations on Pelvic Hæmatocele. By J. BRYNE, M.D., M.R.C.S.E., Resident Fellow of the New York Academy of Medicine, &c. New York: WILLIAM WOOD, 61 Walker Street. 1862.

This is a well written monograph of 44 pages, in which an obscure and important subject is ably and judiciously considered. The author defines Pelvic Hæmatocele thus:—

“The tumor to which the term hæmatocele, or hæmatoma, has been correctly applied, may be defined *an extravasation of blood into or beneath the pelvic peritonæum*; and on account of the space in which this form of tumor has been, for the most part, noticed, it has generally been described as ‘recto-uterine,’ ‘retro-uterine,’ or ‘peri-uterine.’ But, as the extravasated fluid

does not invariably select either of the locations thus indicated, the more correct, and at the same time comprehensive term, of *Pelvic hæmatocele* should, I think, be used, as it includes every form of this affection, whether intra or sub-peritonæal, diffused, or eneysted."

In relation to the time when such tumors are most apt to occur, he says:—

"THE PERIOD OF LIFE at which hæmatocele most frequently occurs, is between 25 and 35 years, 'when the sexual system is in its greatest vigor,' and the pelvic organs are consequently more prone to congestions. For similar reasons, persons of a sanguineous temperament, or given to plethora, are most frequently the subjects of it.* It has also been generally noticed that the period of invasion is immediately before, during, or soon after the catamenial flow."

The causes and symptoms are enumerated as follows:—

"Such decided statements as these, as well as the opinions of many other high and equally reliable authorities, being entirely in accordance with my own experience and observation, I feel warranted in considering (1st), inflammation of the uterine appendages and its consequences, oftentimes the primary, and by far the most frequent among the *predisposing causes* of pelvic hæmatocele. (2d) Habitual constipation of the bowels, and morbid growths interfering with the free return of venous blood, and thereby producing a varicose condition of the vessels. (3d.) A hæmorrhagic diathesis from a disordered state of the blood. (4th.) Tubular, uterine, or vaginal occlusion, obstructing the normal secretion or giving rise to regurgitation through the Fallopian tubes. The immediate or *exciting causes* may be, (1st), sudden suppression of the menstrual, or a hæmorrhoidal discharge; (2d), tenesmus or violent muscular exertion; (3d), injuries by a fall or otherwise, and (4th), excessive coitus, and mental emotions tending to active congestion of the internal organs of generation.

"Still another cause remains to be mentioned which might, with propriety, be classed both as predisposing and exciting, namely, *extra-uterine pregnancy*."

"When the hæmorrhage takes place from the under surface of the ovary, or within the folds of the broad ligament, the patient, having previously suffered more than usual from pain in one or other iliac region, will complain suddenly of severe cramp in the lower portion of the bowels, accompanied or soon followed

* Voisin.

by tenesmus, and weight referred to the loins and sacrum; there may be painful and difficult micturition, and if the quantity of blood poured out be great, faintness, and even complete syncope may now take place; the skin assumes a pale or sometimes anæmic hue; the extremities become cold, the countenance anxious, pulse small and frequent, and the abdomen tympanitic, and very sensitive to pressure, particularly over the seat of the rupture. At this stage of the case, a vaginal examination will rarely fail to detect a tolerably firm and irregular tumor, somewhat painful to the touch, and situated directly behind, or to either side of the uterus. Before proceeding further, and in order to illustrate more clearly the symptoms in detail, I will now relate the case referred to in the beginning of this paper."

On the important question of differential diagnosis the author gives the following brief summary:—

"That the diagnosis of pelvic hæmatocle must be, in many cases, extremely difficult, it is only necessary to refer to the unfortunate case reported by M. Malgaigne, in 1850, where that gentleman proceeded to enucleate what he, and no doubt some of his colleagues, pronounced 'fibrous tumor of the posterior wall of the uterus.' After making some free incisions, he discovered his mistake, but too late, for the patient died. And referring to this part of the subject, Nelaton says, 'the first case which I saw, I pronounced encephaloid disease, and incurable;' and of the second he adds, 'I reflected a long time, and concluded at last to introduce a trocar: if *cancer*, it could do no harm, and moreover, I had an idea that it might prove to be abscess.'

"If, however, a careful inquiry be made into the previous history of the case, I cannot perceive how it is possible to make such grave mistakes; because, malignant growths, at least, and hæmatocle, present so few symptoms in common, that unless in a very anomalous case of the latter, which might possibly exhibit some extraordinary features and complications, such an error of judgment would seem to argue great remissness on the part of the professional attendant

"The *principal* diseases with which it might be confounded, are, *pelvic abscess, retroversion of the uterus, dislocated ovarian cysts or fibrous tumors, and extra-uterine fatation*. With regard to PURULENT COLLECTIONS, it might, with propriety, be hinted, that the constitutional disturbance attending this process is generally so much greater, that this one fact alone might be sufficient to settle the question, and in most cases it undoubtedly

would be; but in the one which I have related, such a distinction would avail but little, since there were local as well as constitutional evidences in abundance to denote any amount of such trouble. The distinctive sign, therefore, to be most relied upon in all cases of suspected abscess, is the almost *instantaneous formation of the tumor* in hæmatocele, because, whether it be within the peritonæal cul-de-sac, or under it, and in the former, even before the inflammatory process has completed the upper boundary of the cyst, a vaginal examination will generally detect the swelling.

Retroversion at first sight might be mistaken for hæmatocele or vice versa, but the position, or rather direction of the os and cervix, and other features diagnostic of this displacement, render it hardly possible to entertain doubts on this point after mature reflection: should some peculiarities be present, however, tending to excite suspicions one way or other, the introduction of Simpson's sound will be the most unequivocal means of arriving at a correct inference.*

"Ovarian Cysts are less likely to be mistaken for hæmatocele than fibrous tumors, because, though their sudden displacement into the retro-uterine region might give rise to symptoms very analogous, yet in the former, the swelling will be more isolated and to a certain extent easily defined, movable, and situated pretty high up in the vagina: the uterus will also admit of being moved independently of the tumor, especially if the sound be used; and lastly, there will be no sudden anæmia.

"Fibrous Tumors, in the posterior uterine wall, being intimately connected with this organ, might, if examined without reference to the previous history of the case, be mistaken for hæmatocele, but with ordinary diligence in our investigation, such an error would seldom if ever occur.

"Extra-uterine Pregnancy in some of its characters, might, I imagine, resemble retro-uterine hæmatocele, but the mildness of the symptoms, some of them perhaps being those referable to ordinary pregnancy, the slowness of their development, and the detached and movable nature of the tumor, ought to distinguish it from an *encysted* hæmatocele at least.

"As to the rupture of the foetal envelope and discharge of its contents into the retro-uterine cul-de-sac, I will not undertake to say in what respect it would be likely to differ from intra-peritonæal extravasation; because I cannot conceive how it would

* Voisin relates a case translated from Mikschik's "Studies on the Pathology of the Ovaries," in which a hæmatocele was mistaken for "retroversion of a gravid uterus at 5m."—though the tumor was perfectly immovable, and a catheter had been introduced into the cavity of the uterus!

be possible to separate the symptoms of the one from the other, with any degree of certainty, in almost any given case.

“Lest it might be supposed, from the brief—not to say incomplete—manner in which I have referred to the various diseases and conditions of the pelvic viscera with which hæmatocele might be confounded, that I do not sufficiently appreciate the many and great difficulties attending the diagnosis of this affection, I cannot dismiss the subject without recording my firm conviction, that in very many cases an accurate idea of the nature of these tumors will be next to impossible until the trocar shall have penetrated their walls: and should any one feel so self sufficient as to believe otherwise, I would refer him to the pages of Voisin, where he will find it recorded of Nelaton, that even so late as 1857 that justly celebrated surgeon mistook a case of post-uterine abscess for hæmatocele; of MM. Robert and Huguier, who pronounced a case of extra-uterine pregnancy an hæmatocele; of Dupis, who relates an instance of serous cyst having been taken for hæmatocele; and of Prof. Stoltz, whose error in diagnosis was similar to that of M. Malgaigne.”

The treatment of pelvic hæmatocele must depend somewhat on the size and location of the tumor, and the inflammatory symptoms accompanying it. If the latter are severe they must be relieved by the means usually relied on for combating local inflammation. If the quantity of accumulated blood is small, it may eventually disappear by absorption. Generally, however, the tumor will not disappear until a puncture is made sufficient to discharge its contents. The extracts we have made, will show the author's style and manner of treating his subject; but we would advise all to read the essay for themselves.

Hints and Observations on Military Hygiene, with the best means of treating the Medical and Surgical Diseases of the Army. By LAURENCE TRUMBALL, M.D., one of the Surgeons of the Howard Hospital. Reprinted from the Medical and Surgical Reporter. Philadelphia. 1862.

This is a monograph of 62 large, double-column, pages, bound in elastic cover; and thereby easily carried by the medical officers of the army, from place to place. From a hasty examination we think the pages well written, and carefully compiled from reliable sources. It is certainly a very useful and convenient manual for the medical officers of the army.

Editorial.

CAMP DOUGLAS.—The following letter was received too late for insertion in its proper place, under the head of Army Correspondence, and is of too much interest to be deferred:—

SANITARY CONDITION OF CAMP DOUGLAS.

CORRESPONDENCE OF PROF. J. H. HOLLISTER, ONE OF THE
CONTRACT SURGEONS OF THE POST.

EDITOR OF THE EXAMINER. *Dear Sir:*—It may interest your readers to learn more fully the condition of the prisoners confined at this place, and the character of the diseases from which they suffer, than may be gleaned from occasional paragraphs in the secular papers.

Let me premise, by a word of reference to the place and to those in command, before I speak of the prisoners and their condition.

CAMP DOUGLAS, so named from its immediate proximity to the beautiful grove, three miles south of our city, formerly the property, and bearing the name, of the late Senator, was fitted up for rendezvous and instruction of our own soldiers, and occupied by several thousands of them, till called to the active duties of the field. It covers an area of about 40 acres, so situated as to have the full effect of the counter currents of lake and prairie winds, and though lower in position than might be desired for camping grounds, its sandy subsoil permitted the rapid disappearance of the surface water, upon the cessation of the heavy spring rains, and soon rendered it perfectly comfortable for occupation.

The Command of the post since the quartering of the prisoners, who arrived here immediately after the fall of Fort Donelson, has devolved upon Col. MULLIGAN's Irish Brigade, the 23d Ill. Vols. assisted by Col. CAMERON, with his Scotch Regiment, the 65th.

In every respect, the oversight and control has been gentle but firm, and the two regiments, though severely taxed by such extended sentry duties, have nobly accomplished their labors.

The Medical Attendants of the sick in camp have been composed of the surgeons of the regiments referred to and their assistants; of surgeons employed by special contract; and such of the Confederate surgeons as were found competent to the duties assigned.

While the camp was under the jurisdiction of the State, E. ANDREWS, Professor of Surgery in Lind University, was post-surgeon. When the care was assumed by the U. S. Government, Surgeon WINER, of Col. Mulligan's Brigade, succeeded to the position, being the senior surgeon of the regiments, and has occupied this position during my connection with the camp.

It is but simple justice to him to state that he has met the arduous duties of that position promptly, ably, and successfully, proving himself *another* of the right men in the right place. His assistant-surgeon, TAYLOR, a graduate of Lind University, by his unusual efficiency and urbanity of manner, in accomplishing the laborious details incident to his position, and by his untiring vigilance and care for the sick, has rendered himself emphatically *the pet of the camp*.

To say *more* of Col. Mulligan's Medical Staff would seem undue laudation, to say *less* would do them injustice.

Dr. PARKS, of our city, whose acquaintance I made in camp, is the surgeon of Col. Cameron's Regiment, and has had special supervision of the wards of our own sick soldiers. He is well posted, and competent to the emergencies to which a regimental surgeon, in active service, is momentarily liable.

The Contract Surgeons, so far as I know them, were the lamented ROCKWELL, who too soon fell a victim to over-work and his sympathy with the suffering, and JNO. M. WOODWORTH, another indefatigable worker—since appointed to a prominent position in the army below Corinth. These gentlemen both graduated with great credit to themselves and the school at the last commencement of Lind University.

Besides these, Dr. THOMAS BEVAN, of our city, and myself, were in daily attendance upon the wards assigned to our charge.

Of the *Confederate Surgeons* I have to state that I became much interested in those with whom I had professional relation.

To these men was committed the care of the invalids in the barracks previous to their entrance to the hospital wards—though, latterly, several of them have rendered efficient service in the hospitals, assuming the entire oversight, as prescribing physicians of several of the wards. Among those thus engaged are Drs. KENNEDY, FOXIE, REID, WOOD, DUPRIE, WILLIAMS, and several whose names, at this moment, I do not recall. They have been faithful to the wants of the sick, promptly and cordially co-operating with the post-surgeon in all matters of sanitary interest.

The prisoners have the appearance of all armies long in service without change of their heavier clothing. They are almost entirely without uniform; and among the divers colors of dress, one is so decidedly preponderant as to earn for the prisoners the sobriquet of “the butternuts,”—although the *walnuts* would be more appropriate.

As fighting material, in physical and mental development there are many among them equal to those of any age or nation. Still the very large preponderance of *delicate*, *pale*, and *frail* ones—many of them mere boys in years and growth—places them in strong contrast with the regiments of our own and adjoining States, of many of whom I am able to speak from personal observation.

There have been additions to the rebels first-quartered here, by arrivals from Island No. 10, from Pittsburg Landing, from the convalescent wards of the St. Louis hospitals, and finally, by the return of those originally conveyed to Madison, Wisconsin; so that now the whole number in camp, I think, is not far from 10,000. The abuses which crept into camp in consequence of the very free access of citizens, and the friends of those in confinement, rendered it necessary to exclude all but those whose duties were imperative to the proper care of the place. The duty of the command has been strictly and impartially discharged, and those evils corrected.

The hospitals are similar in construction to the barracks, built of upright boards, closely battened, the roof being rendered very perfect by the use of cement composition.

The buildings are subdivided, each, into from two to four wards or rooms, about 20 feet wide, and from 40 to 80 feet long. The sick are ranged on either side of the rooms, leaving broad central aisles through their whole length. The camp cot, with mattress, blankets, sheet, and pillow, complete the bed furniture, while an ample supply of drinking cups, spittoons, &c., renders each person independent of the others, as regards these necessities of the sick-room. The cots, and the space which each should occupy, are numbered. The number is placed prominently on the wall, and beneath it a hook, upon which hangs either a slate or sheet of paper. Beneath this a shelf is placed for the drinking cup, spoon, and medicines for the patient answering to that number, and occupying that cot. The space allotted to each patient is about six feet, and from 16 to 35 are appointed to a single ward. Upon the slate the name of the patient is registered; his company and regiment are also recorded, and beneath these, the daily prescription of the attending physician is written; and thus not only does he remember the history of the case at a glance, but in his absence, any assistant could follow him, knowing just what had been previously prescribed. The directions for the nurse are written immediately beneath the prescription, and the date carefully noted in the margin. When the physician has completed his round, the slates or papers (each numbered) are taken to the dispensary, where the prescription of each is filled and numbered. The slates and medicines are then returned, and all placed according to their respective numbers, and the nurse finds above each bed the medicine for that patient, and the written directions for its use. I have been purposely minute that this system of prescribing might benefit those not familiar with hospitals, and who in such times as have now fallen upon us, may be called to the discharge of hospital duties, without previous experience. The wards are 13 in number, and contain 330 cots. About 40 to 60 patients are assigned to a single physician for treatment. It is usual for an older physician to have oversight of three to four wards, with the aid of an assistant physician with whom to divide the labors. To each four wards, there are detailed a

ward-master, to whose care the clothing of patients is committed during their sickness, and who is responsible for the performance of all requirements of the physician; and for each ward six nurses: four for daily, and two for night service of the sick. The duties of these pertain to the proper temperature of the rooms, the assistance and supply of the sick, covering of those sleeping, and the immediate removal of all offensive matters from the room.

The physician orders the diet of invalids, and the steward is governed by his requisition in supplying them. There is a general *ration-list* for the sick room, to which the cooks conform, unless by special orders, particular diet is required. It will thus be seen that for the comfort of our sick prisoners every thing has been done that an enlightened humanity could reasonably dictate or demand; and I desire to make this public record of facts, that there may be no misjudgement of their treatment, by those who wonder at the mortality in camp, or are prejudiced against our Northern people.

I come now to speak of the *diseases* of the camp. No medical man will pass through the wards without expressing surprise at the great similarity of their diseases. But when we reflect upon the similarity of their former methods of life, climate, &c. their uniform *food, dress, and exposures* in camp-life, we are not so much surprised that like causes should so invariably produce similar results.

The patients are presented to us for treatment after from 4 to 12 months' service,—some after enduring almost incredible hardships, as in the case of those lying in the trenches at Fort Donelson, many of them two days without food, and constantly exposed to rain and snow. Still worse, as at Island No. 10, where men by thousands were in the open field, without tents, for three weeks, and with no protection but their blankets. With such precedent exposures it is not singular that they should present themselves in anything but a desirable condition for treatment, or that when finally they become prostrated there should appear so little recuperative power to aid them in recovery!

The twofold influences of a warmer climate and such severe exposures have had the effect to render them extremely *anæmic*, and this condition gives *character* to all their diseases.

Nine-tenths of the inmates are affected either by pneumonia or chronic diarrhœa, and in about one-third of the cases there is a complication of the two diseases.

Pneumonia, as here presented, has symptoms very similar to those in our own latitude, where the patient, during the previous year, has suffered severely from malarious disease, with marked impoverishment of the blood, and, encountering a severe winter, is prostrated in February or March with an asthenic form of this disease.

In many instances, the patients have been unwell for one, two, and even three months, with a "powerful" cough, or "right smart" raising. The day before their admission to the hospital they had severe chills, and are now complaining bitterly, in most instances, of pain as of *pleuro-pneumonia*, now frequently in the left side; and in about one-fourth of the cases presenting well-marked double pneumonia. For the time being, the pain, upon motion of the chest, is the predominant and most aggravated symptom. It yields very tardily to ordinary counter-irritation or dry cupping. In 50 cases, at least, I have witnessed relief in from 10 to 15 minutes, from the application of from 3 to 5 wet cups, over the point of pain, and in almost every instance the relief has been permanent. In these cases we have not facilitated the flow of blood, and the patient seldom loses more than from two to four ounces. We are convinced that this moderate depletion is more than atoned for by the immediate results. The sthenic symptoms usually subside in from 24 to 36 hours after the onset of the disease; and the use of stimulating and sustaining treatment become immediately imperative.

In almost all instances, there is passive congestion of one or both lungs, and while there is tolerable resonance upon percussion of the anterior portion of the chest, while the patient is recumbent, if, changing his position to a sitting posture, the posterior walls are examined there is in almost all cases a very marked dullness, and usually entire absence of respiratory mur-

mur in the posterior portion of one and very frequently of both lungs. The tongue is almost never *dry* nor *coated*; a slight redness being frequently present, and the salivary secretion rather excessive than otherwise. Not one patient in twenty suffers from constipation; not one in ten has the icteric appearance of the skin. The pulse is usually feeble and frequent, and very frequently has the same characteristics as in the second stage of typhoid fever. The progress of the disease is indicated by increased dulness, showing an increase of pulmonary congestion by greater difficulty of respiration, palor of the body, slight lividity of the extremities, and that uniform prostration which indicates a fatal termination not far distant. The progress of the disease is usually very rapid, and the termination sometimes so sudden as to impress us with the utter want in their systems of any recuperative energy to withstand the shock.

The sputa is usually copious, not very consistent, and not in one case in fifty has it the rusty appearance. In later stages, and in the severer cases of longer standing, it is markedly mucopurulent. *The treatment*, as before stated, from the first, has reference to sustaining the vital powers and equalizing the circulation.

For this purpose, while in the first stage, the pulse being strong and frequent, veratrum is sometimes given for its temporary control, still quinine, combined with a little opium, is not unfrequently the very first prescription; nor can it be withheld till the patient is fully convalescent. Complicated as this disease is, with diarrhœa, a favorite pill for its treatment is composed as follows:—R. Sulph. quinia,
Piper nigri, pulv.
Tannin, aa. gr. i.
Pulv. opii, “ ss. M. Ft. Pil.

One to be given every four hours till discharges are checked, when the pepper and tannin are omitted, and the opium diminished, while the quinine is increased. Friction over the bowels with ol. terebinth, seems frequently to benefit the patient, as also the exhibition of the turpentine emulsion, in small doses, internally.

Blisters behave so badly as to be contra-indicated. If once the cuticle is removed, there is usually such copious seropurulent discharge, and such difficulty in healing them, that in most cases I am led to abandon them, using in place stimulating embrocations and hot fomentations. In several cases I was induced to try the effect of alcoholic stimulation alone, and under the influence of milk punch, given every one or two hours, I frequently saw the pulse diminish, the congestion subside, and the patient convalesce. The after-treatment, of course, was more strictly tonic. My views of the use of alcohol I have not space in this already too long letter to give; but I firmly believe that I saved a number of patients which I should have lost, but for *stimulation*, followed by tonics and iron.

My attention was early called by Dr. WINEY, to the use of Donovan's solution (liquor arsenici et hydrargyri iodide,) in the treatment of pneumonia. I watched its effects in about 75 cases, as many as 40 I treated with this medicine alone, in connection with a nutritious diet, and I must say that in most instances, I was charmed by the result. The tonic effect of the arsenious element and its stimulation of the capillary system fulfilled an important indication. The mercurial alterative was here exhibited sufficiently to fully meet the necessity of the case, while the glandular stimulation of the iodine seemed to complete the requirement.

It is contra-indicated where there is decided irritability of the stomach and bowels, or where in the advanced stage of the disease the system is greatly prostrated. The dose was from 10 to 30 drops in milk every two hours.

The diarrhoea indicated sometimes the mere atony of the mucous membrane of the bowels; more frequently, as the *post mortem* examinations showed, there was a chronic enteritis, which yielded but little to astringents, and by which in fact it was more frequently aggravated. Bland nutritious food, and the sub-nitrate of bismuth combined with opium seemed best to control the difficulty. Dropsical effusions are a very frequent concomitant or sequel of these diseases. Erysipelatous inflammation of the face and extremities very often supervene, but

yielded as readily to muriate tinct. of iron, as ague does to quinine.

Pardon the length of my letter, and give but an extract if your limits require. Respectfully yours.

J. H. HOLLISTER.

Camp Douglas, June 1, 1862.

CHANGES IN THE MED. DEPART. OF LIND UNIVERSITY.—On account of continued ill-health, Prof. A. L. McARTHUR has resigned the chair of Materia Medica and Therapeutics in this Institution. Prof. McARTHUR was able to give but little more than half of his course last winter, the deficiency being supplied by other members of the Faculty.

Prof. McARTHUR was an earnest and interesting lecturer, and a highly esteemed member of the Faculty. It is greatly to be regretted, that the promising career of usefulness open before him, should be so soon checked by protracted physical infirmities.

The chair of Materia Medica and Therapeutics, made vacant by the resignation of Prof. McARTHUR, has been filled by Prof. J. H. HOLLISTER, transferred from the chair of Descriptive Anatomy. The latter chair has been filled, temporarily, by the appointment of J. S. JEWELL, M.D., Lecturer on Descriptive Anatomy and Demonstrator. Dr. JEWELL, was a member of the first graduating class of the University, and will discharge the duties of his new position with a zeal and ability, that will soon earn for him an enviable reputation.

CHANGES AT CAMP DOUGLAS.—Dr. WINER, surgeon to the 23d Regiment of Illinois Volunteers, (Irish Brigade), having left with his regiment for the seat of War in Virginia, the office of Post-Surgeon has been assigned to Dr. B. McVICKAR, of this city, aided by a number of assistants.

The number of prisoners in the Camp, at this time, is about 9000, of whom little more than 300 are on the sick list. The principal diseases are typhoid fever, diarrhoea, pneumonia, and erysipelas.

ARMY MEDICAL OFFICERS NOT BELLIGERENTS.—We are very glad to learn that our Government has adopted the principle, that Surgeons and Assistant-Surgeons, are not belligerents in war, and consequently not to be taken or held as *prisoners*. The common interests of humanity require that the Surgeon should be allowed to administer freely to the sick and wounded, wherever found on the field of strife, without liability of arrest or imprisonment.

NEW YORK ACADEMY OF MEDICINE.

DISCUSSION OF DR. J. M. SIMS'S PAPER ON VAGINISMUS.

Dr. PEASLEE.—Mr. President, I feel for one under very great obligations to Dr. Sims for giving to this disease a distinctive name, and I think the whole profession, so far as they are acquainted with the disease, will feel a similar obligation. In regard to the use of precise terms employed by Dr. Sims, I think the termination indicates the nature of the disease. In regard to the recommendation of the last speaker (Dr. Stevens), I think that many a woman who had suffered as in the first case related, would rather die than have a continuance of the pain. The first case that came under my notice was recognized by mere chance, and occurred some ten years since, in a lady who had been married eleven months. In that instance the husband was not wanting in efforts on his part, neither was the wife wanting in patience and endurance on hers—the sexual act, however, was never accomplished. I was applied to for advice, and found the lady in the condition of a “nervous wreck,” as Dr. Sims styled it. On examination, I found what I supposed to be a partial occlusion of the vagina by the hymen, and I accordingly proposed an operation for a division of the membrane. It was about the time when ether was commencing to be used for anæsthetic purposes, and the sensitiveness of the parts was so great, that I remarked that I could not perform such an operation without first inducing insensibility. I gave the ether, and to my astonishment found that it was very easy to introduce the finger into the vagina, the former resistance to such an endeavor being now removed. I hence referred the difficulty to spasm of the vagina which was confined to the sphincter muscle. I made use of unguents, among which was one composed principally of extract of belladonna, which seemed to relieve the sufferings to that degree that the sexual act was accomplished after a time. The patient resided in the State of Maine, was under

treatment but a short time, and I have not heard anything from her since. Within about five years after, I saw another case precisely similar in character, though with less severe symptoms. I may here remark, that I believe cases may be met in which there is every gradation, from the severity of the symptoms in Dr. Sims's first case, down to those in which but slight hinderances to sexual intercourse exist. The case I now refer to was a lady who never had children, who had been married a period of ten years, who had frequently suffered from sexual intercourse, but who, some months previous, had found the accomplishment of the act impossible, without the greatest agony. In that instance, by using an ointment, composed of two grains of atropine to 5j. of lard, I succeeded in overcoming the spasm in about a fortnight. She remained well for two years, when I was again applied to, and the same treatment was available. I have seen quite a number of cases of Vaginismus, and I have been able to relieve all thus far, with the exception of my first case, which I had in charge only a short time. The ointment which I have generally used has been composed of atropine and lard in the proportions mentioned. I, of course, did not limit myself to the exclusive use of this remedy, but also employed mucilaginous injections, or injections containing extract of hyosciamus. As soon as the disposition to contraction is overcome to that extent as to make it allowable, I make use of a small-sized dilator. I have seen a case of vaginismus within the last fortnight—a lady had been married seven years, but had enjoyed sexual intercourse only about twice. It is possible now to introduce the index finger into the vagina, and in this instance, as in all the cases which I have seen, there is the excessive tenderness of the hymen, or carunculæ myrtiformes, as described by the author of the paper. In conclusion, Dr. P. asked concerning the extent of the incisions made by Dr. Sims.

Dr. SIMS.—The incisions I make are more in the form of a Y than anything else. I commence first on the right of the middle line, about half an inch above the margin of the sphincter muscle. The sphincter muscle is about half an inch across, and from its edge down to the outlet of the perineal opening, where the skin becomes mucous membrane, is very nearly an inch in most women. My incisions meet just below the lower edge of the sphincter muscle, and become one incision down to the outer edge of the skin. In regard to the composition of the term vaginismus, I think there are very many comprehensive words used in medicine which are made up of mixture of Latin and Greek. However, I care very little by what precise name

the disease is called; only it strikes me that the term is a comprehensive one, and that every physician who is not a good classic scholar will not be under the necessity of looking up the meaning of it in his Lexicon. In regard to the application of belladonna—one of my patients had used the ointment for years without any good effect, and the case now under my care, upon which I have not yet operated, has also proved the inefficiency of the remedy. The operation which I propose cures the disease, but the use of the dilator makes the cure permanent.—*American Medical Times.*

TAKING COLD, ETC.—In Dr. Ware's tenth lecture upon General Therapeutics, concluded in the *Boston Medical and Surgical Journal* for January 30, remarks are made upon the abstraction of heat from the body, "taking cold," etc. Dr. Ware refers to the solicitude of many in avoiding exposure by which colds are taken, and remarks very justly, we think, that

"The greatest error, perhaps, on this point, arises from the disposition to substitute external warmth by artificial heat, and the exclusion of air and confinement within doors, for adequate clothing. The effect of this error is to deprive patients with chronic diseases, and even persons with simply feeble health, of the invigorating influence of external air. Bad and variable as our climate is, there are few individuals who may not, by the careful and gradual cultivation of the habit, acquire the power of going abroad at all seasons, and almost all weathers, not only without danger, but with positive benefit. More persons induce imperfect health by the habits of seclusion engendered by the *fear* of taking cold, than are actually injured *by* taking cold. No doubt an artificial state of the system in this particular is produced in many persons, and no sudden change of habit would be safe."

Our experience justifies, and we have long entertained opinions as above. Those persons who are the most particular to observe all cautions against taking cold, by keeping indoors, except on warm and sunny days, are by far the more likely to suffer from colds than those who have more energy and boldness in exposing themselves. The rose-bush reared in the open air will flourish and bloom in its perfection of beauty. A similar one reared in a blinded and curtained sitting-room or parlor, if carried into the open air, will wilt when the sun looks brightly upon it, or shiver and die at the touch of the first white frost. Almost everybody supposes that winters are particularly unfavorable for consumptive invalids. This should not be so. The

tonic influence of cold, its power to increase the appetite, and the function of assimilation, should increase the strength, and add vigor to the nervous system. Besides, the greater density of the atmosphere should enable the lungs, in their diseased condition, causing diminished availability, to do their required labor and perform their requisite functions easier and better than in summer, when the atmosphere, per cubic foot, from its rarity, contains far less oxygen. If the consumptive patient has too little energy to expose himself to the winter's cold, or is too timid to let the lungs feel the influences of the dense and pure air, and shuts himself up in the tight, artificially warmed room, where even the rarified atmosphere is impure, then are winters peculiarly trying to consumptive patients.—*Medical & Surgical Reporter*.

The Act re-organizing the Medical Department of the Army provides for the appointment of eight Sanitary Inspectors, whose special duty would be to visit the camps and hospitals, and supervise their sanitary condition. These appointments have been delayed, to the great detriment of the army. The nominations have finally been made, and the Senate has acted upon them. So far as announced, the following gentlemen have been selected, viz.: Dr. John M. Cuyler, Surgeon, U.S.A.; Dr. Richard H. Coolidge, Surgeon, U.S.A.; Dr. Edward P. Voldeum, Assistant Surgeon, U.S.A.; Dr. Geo. H. Lyman, Geo. F. Allan, and W. H. Mussey, Brigade-Surgeons, U.S.A.—*American Med. Times*.

SURGEONS AND NURSES.—The demand is and will continue to be for competent surgeons and nurses. They are wanted not temporarily but permanently. New surgeons offering their services should do it with this reference. If volunteers cannot be obtained, Dr. Cuyler is prepared to hire competent surgeons, who will be expected to engage themselves as long as their services are required.

By a recent Act of Congress, the rank of Brigade-Surgeon is abolished, and this class of medical officers are subject to the same rules which govern surgeons. The corps of Surgeons is also to be enlarged by the appointment of 160 more for the war, 40 being full Surgeons, and the remainder Assistant-Surgeons.

At the Annual Meeting of the Medical Society of the State of Pennsylvania, held in Philadelphia, a committee was appointed to inquire as to the expediency of publishing a Daily Medical Gazette.—*American Medical Times*.

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"	1 1/2 "	drogen.....	1 "
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Compound Rhubarb.....	3 "	tive.....	2 "
Compound Colocynth.....	3 "	Extract of Genitan.....	2 "
Compound Squills.....	4 "	Iodide of Potassium.....	2 "
Dover Powders.....	3 "	Calcined Magnesia.....	2 "
Carbonate Iron, Vallet's formula....		Rhubarb	2 "
Carbonate of Manganese and Iron.....		Ergot, powder covered with sugar	
Kermes.....	1-5 "	as soon as pulverized.....	2 "
Santonine.....	1/2 "	Phellandria Seed.....	2 "
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Magnesia and Rhubarb, each.....	1 "	Sub-Nitrate of Bismuth.....	2 "
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“ Opium,	Proto-Iodide of Mercury.		
Lupuline.....	1/2 grain.	Extract Rad. Acoitue.....	1/4 grain.
Extract Nux Vomica.....	1/2 “	Emetine.....	1/4 “
Veratrine.....	1-24 “	Iodide of Mercury.....	1/4 “
Sulphate of Morphine.....	1/2 “	Valerianate Morphine.....	1/4 “
Corrosive Sublimate.....	1-12 “	Acetate Morphine.....	1/4 “
Nitrate of Silver.....	1/4 “	Digitaline.....	1-24 “
Extract of Hyosciamus.....	1/2 “	Strychnine.....	1-12 “
Colchicum (each granule equal to two drops of tincture.)			

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ARTICLE XIX.

SANITARY CONDITION AND WANTS OF CHICAGO.

REPORTED TO THE CHICAGO MEDICAL SOCIETY, JUNE 6, 1862.

BY N. S. DAVIS, M.D. & PROF.

In the April number of the CHICAGO MEDICAL EXAMINER, I made some observations on the Metropolitan Health Bill, for the City of New York, then under discussion in the Legislature of that State.

What was then said in relation to New York, applies equally well to Chicago.

This is, not only, the great Commercial Metropolis of the North-west, inviting and receiving stated visits from merchants and traders in almost every town throughout this vast region; but its immense grain and lumber trade, brings it into almost equally extensive and direct contact with the agricultural population; while its Commercial Colleges, Theological Seminaries, Universities, and Medical Colleges, make it no less a resort for Students.

All these classes are directly interested in the sanitary condition and health of this city; first, individually, during their visits and stay here; and second, from their liability to receive and convey to their respective localities, whatever infectious or

contagious diseases they may come in contact with while in the city. The naturally low and level condition of the city plot has given the locality a traditionary character for unhealthiness, and an aspect, much of the year, calculated to strike the eye of strangers unfavorably. While the raising of the grade and the paving of the principal business streets has much improved their appearance; yet even this has left many vacant lots so much below the streets with a wet and dirty appearance that the impression of unhealthiness made upon strangers has scarcely been diminished. Let us go in whatever direction we may, whenever our city becomes the subject of conversation, unfavorable opinions in regard to its sanitary condition, founded on a simple passing observation of the circumstances to which we have alluded, are freely and confidently expressed. It matters not how erroneous these opinions may be in fact, they are efficient in deterring strangers from choosing our city for residence, unless strongly impelled by purely business considerations.

It is thus evident, that strangers, non-resident business men holding frequent intercourse with us, students seeking education in our schools, and residents, are all directly interested in both the real and apparent sanitary condition of this city. We say *real* and *apparent* sanitary condition, because as we shall endeavor to show, there is a wide difference between the two; and yet both are worthy of careful consideration. There is no doubt but the location of Chicago, in its natural or unimproved state was unhealthy. When it was a mere trading post or military station known as Fort Dearborn, statistics show that there was an annual average number of attacks of malarious fevers, equal to 250 cases for every 1000 inhabitants, and diarrhœa and dysentery prevailed in equal ratio.

It is well known that these endemic diseases continued to prevail annually, with but little amelioration until 1849. In the spring of that year, epidemic cholera made its appearance for the second time in this country. And the inhabitants of this city, then numbering but little more than 28,000, suffered as severely from that disease as almost any other, except those of New Orleans.

While this much dreaded scourge disappeared from nearly all the other cities of our country with the years 1849 and 1850, it continued to recur here, with considerable severity, during the summers of 1850, 1, 2, and 4. It is perfectly natural that all these facts, concurring with the natural appearance of the locality, should give it a very unfavorable sanitary reputation, both at home and abroad. Since 1854, an extensive system of sewers have been constructed, and the wholesome water of the Lake, which was previously supplied to only a small part of the city, has been carried to almost every part of it. The accumulation of vegetable matter on the surface of the prairie, surrounding the city on three sides, has been prevented by feeding and mowing, while the excess of water has been greatly diminished by ditching. These improvements, while effecting comparatively little change in the appearances which would strike a stranger or temporary visitor, have nevertheless produced a great change in the actual Sanitary condition of the city. The most reliable statistics accessible show that the annual ratio of mortality for the seven years ending with Dec. 31, 1854, was more than 1 in 30 of the population, while for the seven years intervening since that date, the average annual ratio of mortality has been less than 1 in 40. Thus making it, for the latter period, almost equal to that of the most healthy cities of the Union. It is true, that the common practice of measuring the sanitary condition of any community by the number of deaths in proportion to the population, is not entirely reliable. Because some diseases, as intermittent fever, catarrhal inflammations, and rheumatism, may be very prevalent annually and yet produce very few deaths; while other diseases, as pulmonary consumption, typhoid fever, and dysentery, would give a far greater number of deaths in proportion to the number of cases. But from close observation and constant practice in this city during the last thirteen years, I am sure that by both the tests just indicated, its sanitary condition will be found to have greatly improved during the last half of that time. Notwithstanding this, however, it is apparent to every intelligent physician, that still greater improvements are not only practicable, but imperatively demanded by

the welfare of the citizens and the reputation of this as the Commercial Metropolis of the North-west. I will endeavor, as briefly as possible, to point out the more important of the improvements, and the measures which should be adopted for effecting them.

1st. Our system of sewerage should be rendered more efficient and valuable, by compelling the owners of vacant lots to so connect them with the street sewers as to cause a prompt removal of all the water falling on the surface of such lots; and by rigidly requiring all owners of houses to keep the rear of their lots, and especially the surface immediately under the houses, constantly free from standing water, by means of permanent connection with the street sewers. The splashing of water under the loose planks of the side-walks, the mud, and puddles of green water in the gutters, may impress the visitor or mere superficial observer, with a horrid idea of the salubrity of the city, but those are really almost harmless when compared with the surface water which is allowed to saturate the soil in the rear of, and under the dwellings; and in the latter place, often to stand in pools two-thirds of the year. It is from this source that the invisible aqueous vapor rises through the floors, dampening bedding, clothing, books, everything, indeed, in the house; and in the warm season, causing such things as are not in constant use, not only to become damp, but often also covered with a vegetable fungus, called "mould."

I am satisfied that much of the severe sickness which has occurred in this city, during former years, has originated directly from this source. Since the construction of permanent sewers, the evil has been greatly diminished; but a careful inspection will show that property owners are still, in many instances, extremely negligent in regard to this matter.

2d. Another improvement, closely allied to the foregoing, should consist in requiring the street commissioners to have all ditches, gutters, and entrances to cesspools and sewers carefully and thoroughly cleared of obstructions as soon as the frost is out of the way in the spring. The constant neglect of this, is really the cause of retaining much of the water, not only in

the ditches, but on the surface of lots, and under side-walks and dwellings, until it is re-evaporated by the early summer heat. For years this matter has been almost entirely neglected throughout the city, except in the central business streets, until so late in the season that the oppressive mud of the ditches often mixed with the refuse of the kitchens, shoveled out upon the streets became at once exposed to a summer sun sufficiently hot to effect rapid decomposition, and fill the air with more offensive effluvia than though it had been left undisturbed. When ample facilities are given for the rapid escape of water, every shower through the spring and summer only tends to cleanse and purify the surface of the streets, alleys, and yards, while at the same time it flushes and washes out the sewers. But if the water is retained on the surface until it escapes by evaporation, it maseerates whatever decaying material exists, either on the surface or in the soil, and the rising vapor carries with it the products of decomposition to impregnate the air, and become an efficient cause of disease.

3d. In connection with sewers there is another item worthy of careful attention. It is the escape of offensive gases from the outlets and other openings of the sewers, in such quantity as to render the whole air of the vicinity extremely offensive to the smell, if not otherwise injurious. This is a matter particularly calculated to produce an unfavorable impression on strangers and recent residents. The turning of all these offensive gases into the river, has undoubtedly aided in producing its present impure and offensive condition. So far as the ordinary sewers contribute to this offensive condition of the river, I think the evil can be greatly mitigated, if not entirely removed, by a very simple process. It is well known that charcoal will absorb and render odorless, large quantities of the most offensive gases. Hence if all the main sewers were supplied, at proper distances, with grated ventilators, so constructed that a bushel of charcoal could be placed in each ventilator, the gases generated in the sewers, instead of being forced on to their exit in the river, would escape as fast as generated, through the charcoal in the ventilators and be thereby rendered both odorless and harmless.

The charcoal in the grates could be readily changed as often as experience should prove it to be necessary. This arrangement, with the attention to clearing of the street gutters, ditches, cesspools already described, and a little more attention to the frequent flushing of sewers by fresh water from the fire hydrants, would effectually and permanently secure the river and the city from injury by our system of sewerage.

I am, by no means, disposed to attribute the present black and extremely offensive condition of the water in the river, altogether, to impurities derived from the street sewers. First, because there is nothing in the nature or composition of the ordinary sewerage matter that could impart the peculiar black color at present seen in the river water. Second, because neither the extent nor connections of the street sewers have been materially altered for the last *two* years; and yet the present peculiar condition of the river was not manifested until the last four or five months. Third, because there are other sources of the most foul impurities that require a very rigid investigation.

The most important of these sources are: the slaughter-houses, the hog-yards, and the distilleries located on the two branches of the river; and the waste water saturated with sulphurous gases from the gas-works. From direct inquiries, I am satisfied that most if not all those engaged in slaughtering and meat-packing, on the river branches, intend to have both the blood and offal carried entirely away from the river, but it is to be feared that those who are entrusted to do the work, carelessly allow much to enter the river which should have been excluded. The city cannot exercise too vigilant a supervision of these establishments; and certainly no hog or cattle yards connected with distilleries should be allowed in such positions as to turn their offensive refuse into the water.

If all these controllable sources of filth and putrefaction had been guarded against by an efficient system of supervision—if the street gutters, ditches, and cesspools had been kept thoroughly free—if the sewers had been properly ventilated with the aid of charcoal; and if regular attention had been given to stated flushing of the sewers by fresh water from the hydrants,

the river would not at this time present the horribly offensive condition in which it really is. Yet it is highly probable that other and additional means for maintaining the purity and healthfulness of the river must now be resorted to. In devising such additional means, the two all-important objects are, efficiency and permanence. To secure the first, it is necessary that a current should be established and maintained, sufficient to clear the channel of the river from all foul deposits. Four methods of doing this have been suggested.

First, it has been proposed to construct a dam across the branches of the river, with a suitable gateway; and when a sufficient *head* of water has been raised, open the gateway and let the water above suddenly sweep out the channel.

There are two fatal objections to this proposition. In the first place, there is no point on either branch of the river where a dam could be made to raise the water to a sufficient height for the purpose, without overflowing the banks and the prairie, so as to create a greater evil than the one for which it is to constitute a remedy.

In the second place, the small amount of water flowing into either branch during July, August, and September, (the very time when flushing is most needed,) would render it wholly unreliable as a source of supply at that season of the year.

The second proposition is to open a communication between the North Branch and the Desplains River, by which enough of the water of the Desplains should be turned into the North Branch, to maintain an efficient current towards its mouth.

This proposition involves two inquiries:

1st. Is the supply of water through the Desplains at such a level, and always in such *quantity*, as to insure the needed current in our river?

2d. Would the diversion of the water, sufficient for our purpose, from the Desplains interfere with the just rights and privileges of the inhabitants occupying the district of country through which that river runs?

We have not the result of actual surveys before us, in regard to the relative height of the Desplains and the North Branch of

the Chicago River, but assuming that the former is sufficiently elevated, is its supply of water abundant at all seasons of the year? We fear not. For in the dryest part of every summer and autumn, the water in its channel becomes so low that if the whole was turned into the North Branch its presence would hardly be felt; and yet that is the very season when we need the most efficient supply for the purpose of purifying our river.

If at such a season of the year, all the water of the Desplains is turned from its natural channel, it would doubtless prove a serious loss and inconvenience to all the inhabitants living near it, below the point of diversion.

Without any certainty of obtaining a sufficient amount of pure water at the season of the year when most needed, and the strong probability of meeting opposition and perhaps expensive litigation, we think the proposition to interfere with the natural course of the water in the Desplains scarcely worthy of serious consideration.

The *third* remedy which has been proposed for relieving the river of its offensiveness, is, to open a channel sufficiently deep for the current of water to be permanently changed from the South Branch of the Chicago River, southward to the Illinois River: thereby converting our river into an outlet instead of an inlet to the Lake.

The proposition which is being urged upon Congress, to construct a Ship Canal, connecting the Lake at this point with the Illinois River, has been looked to with hope for the practical accomplishment of this plan or remedy. The construction of a Ship Canal, however, is a work requiring several years for its completion, and the expenditure of many millions of dollars; and is altogether too remote and uncertain to be relied upon as a sanitary measure for this city.

The *fourth* plan for keeping the river free from offensiveness, is that proposed as a part of the original system of sewerage. It consists in opening a channel from the Lake to the South Branch of the river, as far south as practicable, through which an abundant supply of water, to flush and purify the river, can be at all times furnished from the Lake, by means of a stationary engine and elevating water-wheel.

This plan has the advantage of being certainly effectual in its results; of being always fully under the control of the proper authorities of the city; and of not involving an expenditure of money greater than the city could bear.

These advantages are certainly sufficient to give it the preference over all other projects, as a permanent measure for preserving a proper sanitary condition of the Chicago River.

If the measures already alluded to in this report, for keeping the street gutters, ditches, lot and house drains always clean and free from obstructions; the main sewers properly ventilated and flushed at suitable intervals of time from the street hydrants; the cattle and hog yards connected with distilleries removed from the banks of the river branches; *the immense amount of sulphurous gases turned from the gas-works into the Monroe Street sewer, stopped*;* and the sand-bar at the mouth of the river dredged out, so as to permit a more free channel, not only for commerce, but for the egress and ingress of currents of water, there would be very little need of any other special means for preserving a proper sanitary condition of our river, at least for some years to come. But if such special or extra means should be found necessary, then a water-wheel, like the one at Bridgeport for feeding the canal, and an engine sufficient to move it, with a channel from the Lake to the South Branch of the river, would constitute the most efficient, permanent, and economical plan that could be devised for that purpose.

4th. Next in importance to an improvement in the condition of the river, is the furnishing of a purer quality of water throughout the city for ordinary use. The water of Lake Michigan, when properly obtained, is as pure and wholesome as is to be found in any part of the world. By the present arrangement of the Water Works, however, the water is taken from the Lake so near the shore and so far within the densely populated part of the city, that it not only becomes riley with every storm, but it often becomes perceptibly impregnated with

* We have not any doubt but the greater part of the offensive smell, and the peculiar black color of the river water during the present season, is derived from the refuse of the Gas-works, which was last autumn turned into the Monroe Street sewer.

the offensive effluvia escaping from the mouth of the river. This should be immediately remedied, either by extending the supply-pipe much farther into the Lake, or along the shore to some point north of the old cemetery, the neighborhood of which should be thoroughly guarded by efficient legislative enactment, against the present or future establishment of distilleries, breweries, slaughter-houses, cattle-pens, or any kind of manufacturing business that could possibly affect the purity of the water.

5th. Another improvement of great importance bearing on the sanitary condition of the city, would be the rigid enforcement of the ordinance requiring in all cases a certificate showing the name, age, residence, and cause of death, before a body could be *interred* in any of the cemeteries connected with the city. The system or practice at present pursued by the City Sexton, is perfectly valueless for all purposes, except merely the gross number of deaths. If the ordinance requiring certificates to be procured was rigidly enforced, and the certificates immediately returned to some one, not only competent to judge whether they were properly made, but also capable of tabulating them correctly at proper intervals, we could soon ascertain both the absolute and relative healthiness of every street, ward, or district in the city. Statistics thus prepared would not only be valuable to sanitary science generally, but would render invaluable aid in ferreting out, and removing from among us, the active causes of disease and death. Of course, the statistics thus obtained, together with a full report on the sanitary condition of the city, and the means for improving it, should be made to the Mayor and Council, at least once a-year.

I know of no city, except *Chicago*, with a population of more than 110,000, that has neither a health officer, board of health, or any other official sanitary organization. Not long since, one of our daily morning papers contained a whole column of editorial, founded on the supposition that there was no provision for medical attention to the sick poor of the city, and calling on the Mayor to appoint a "City Physician" for that purpose. That editorial was altogether erroneous.

The poor of the city, whether sick or well, belong to the County of Cook, and are exclusively under the care of the Board of Supervisors. That Board has for several years past, appointed two physicians; one to reside at or near the county poor-house, and attend the inmates of that institution, and another, resident of this city, whose duty it is specially to attend such sick poor within the city as are entitled to aid from the county.

These are certainly medical officers enough to take care of the *sick poor*, and consequently we want no "City Physician" on their account.

What the city does need, however, for the purpose of ensuring efficient attention to the important matters discussed in this report, is a thoroughly competent Medical Health Officer, whose duty it should be to keep up a constant inspection and supervision of everything relating to the sanitary condition and mortality of the city. He should be required to report to the Mayor and Council promptly, all matters requiring special or immediate attention, and make a general report, suitable for publication, once a-year. To him all certificates of death should be returned, that the statistics furnished thereby might be included in his annual report. He should be selected solely with reference to his thorough qualifications as a Sanitary Superintendent and adviser, without the slightest reference to his political opinions or party attachments. Such an officer would be of inestimable value to the city.

ARTICLE XX.

FATTY DEGENERATION OF THE KIDNEYS. CARDIAC HYPERTROPHY. DEATH. AUTOPSY.

By JAMES P. ROSS, M.D.

Read before the Chicago Medical Society.

A. L., aged 27, born in Germany, was admitted into the Chicago City Hospital, Feb. 8, 1860. In Nov. 1859, he first

consulted his family physician, Dr. Ernst Smith. At that time he complained of frequent and severe palpitations of the heart, great mental anxiety, and almost entire loss of sight. The treatment consisted in mild derivations and tr. verat. verid. internally, with the tr. iodine and digitalis externally, over the region of the heart. This treatment was continued for one month, affording considerable relief. At this time, the disease assumed the characteristics of a severe remittent bilious attack. In addition, there were slight convulsions, affecting principally the upper extremities, with mental aberrations; cardiac symptoms somewhat lessened; the urine deposited a reddish sediment, but no trace of albumen. Cold to the head, quinine, and mild laxatives, constituted the principal part of the treatment. During the latter part of January, 1860, another similar attack supervened. At this time, the convulsions assumed an epileptiform character, lasting from 10 to 30 minutes, and recurring as often as once every 4 or 6 hours, with delirium intervening. A second examination of the urine failed to detect any trace of albumen. Feb. 8th, was admitted into the City Hospital.

On admission, the patient was delirious a greater portion of the time; sleepless; countenance suffused; eyes injected; and appetite capricious. The apex of the heart beat between the sixth and seventh ribs, three and a half inches from the sternum; impulse full and diffused; cardiac dulness three inches transversely; heart sounds normal. The urine deposited a reddish sediment, was normal in quantity; sp. gr. 1012°; and free from albumen. Ordered blue mass, aloes, and ipecac every six hours, until free movements of the bowels should be produced. Feb. 12. bowels freely moved; mental derangement somewhat less. Ordered sul. quiniæ, grs. iii.; sul. morphia, gr. $\frac{1}{4}$, every four hours.

Feb. 14. Constant delirium, with sleeplessness. Ordered sul. ether and laudanum sufficient to quiet the restlessness.

Feb. 16. Delirium less violent; bowels constipated. Ordered a cathartic of castor oil and turpentine, to be followed by iodide of potass, 10 grs. *ter die*.

Feb. 21. Had a slight convulsion, lasting about 10 minutes.

Feb. 23. More rational; sleeps most of the time during the day, and wakeful at night.

Feb. 25. Complains of pain in the head; tightness across the chest; no appetite; bowels costive; no albumen in the urine. Ordered a cathartic.

Feb. 28. Patient rational.

March, 3. Delirium for the last two days. Ordered ext. hyosciam. grs. iii. and prot. iodid. hydrarg. gr. $\frac{1}{4}$, *ter die*.

March 8. Patient rational during the day, delirious at night, and complains of pain in the head. Ordered a blister to the neck, and continue the pills. This treatment was continued until the 21st inst. When he had so far recovered as to be dismissed at his own request.

On the 19th of May—nearly two months after his discharge, he was re-admitted into the Hospital for further treatment. At this time the pulse was 91, and feeble; the countenance waxy in appearance, and puffy; in addition, there was dyspnoea, and expectoration of a reddish brown tenacious sputum; no dulness on percussion; on auscultation, coarse crepitation heard over both lungs, with sibilant and sonorous ronchi. Ordered a cathartic, followed by calomel, ipecac, and bloodroot, every three hours. A blister over the left lung, posteriorly.

May 21. Dyspnoea less; expectoration copious; bowels free.

May 22. Slight delirium; urine pale and scanty. Ordered squills, digitalis, and bloodroot, each one grain, every four hours.

May 23. Delirium less; dyspnoea increased; pulse 108; urine scanty. Continue same treatment, with the addition of one grain of calomel to each powder.

May 24. Convulsions all night. Died comatose at 6 o'clock A.M.

AUTOPSY THIRTY HOURS AFTER DEATH.

Thorax.—Old adhesions of the left pleura, the right normal. Left lung crepitant throughout; bronchial mucous membrane of deep red color and thickened. The right lung presented much the same appearance, but in a minor degree. Heart enlarged; weight 16 ounces; walls of left ventricle almost one inch in thickness; valves perfectly normal. *Abdomen.*—Liver large,

but healthy. Left kidney atrophied; surface corrugated; cortical substance nearly destroyed. Right kidney normal in size, pale and fatty. Other abdominal organs healthy. *Brain*, normal.

Remarks.—In the light which the *post mortem* gives the above case, there is no difficulty in making a correct diagnosis. During the lifetime of the patient, from the facts elicited, no certainty could be arrived at. There was almost an entire absence of symptoms directing the attention to the kidneys as the organs involved. The urine was twice tested with heat and nitric acid before the patient was admitted into the Hospital, and twice afterwards, without showing a trace of albumen.

This case is interesting as affording several points of interest not usually present in this disease. First. The absence of albumen. Second. Absence of dropsy. Third. Cardiac hypertrophy without valvular lesion. Fourth. Persistent mania with occasional blindness.

In the beginning the morbid process in the kidneys was fatty degeneration of the gland cells. This rendered them unfit for the performance of their function—the secretion of the urinary ingredients. And when so much of the secreting structure of the kidneys became involved that blood was not depurated of these ingredients, congestion of the intertubular capillaries ensued. This congestion proceeding backward of the Malpighian bodies gave rise to exudation of serum (containing albumen) into the uriniferous tubes, and at an early period of the affection, albumen probably could have been detected in the urine. But during the progress of the disease, thickening occurred in the walls of the Malpighian bodies, preventing this transudation of serum and consequent detection of albumen. This thickening of the Malpighian bodies not necessarily lessening the flow of water, we had in the above case the normal daily discharge. and as dropsy occurs inversely in proportion to the amount of liquid discharged, we are furnished one reason for its absence. But renal dropsy has other elements entering into its production. A watery condition of the blood,—the retention of morbid materials in the systemic circulation, act as agents in its production. In the above case, no doubt, the presence of the retained

urinary excrement tended to the production of dropsy, but so gradually did it occur that a compensating process was established in the centre of the systemic circulation, and its occurrence prevented. It is a well established fact, that obstruction in the lungs produces hypertrophy of the right ventricle; and so may obstruction in the systemic circulation give rise to hypertrophy of the left cavities of the heart.

The mania, blindness, and convulsions will be readily attributed to the poisonous action of the urinary excrement upon the nervous centres. The vertigo and convulsions were occasional, the delirium unusually persistent, continuing for months, and, no doubt, the forcible action of the heart contributed to its production. The nervous system gave the leading symptoms. To review the chain of morbid processes in the case we have:

I. Fatty degeneration of the secreting cells of the kidneys.

II. Retention in the blood of urinary excrement, producing:
1st. Congestion in the kidneys, with the conservative process of thickening of the coats of the vessels, by which the exudation of albumen was impeded; 2d. Obstruction in the systemic capillaries, with the conservative process of cardiac hypertrophy preventing congestion and dropsical effusion.

III. Cardiac hypertrophy and morbid blood combining to produce the delirium, blindness, and convulsions.

ARTICLE XXI.

STRYCHNIA IN HABITUAL CONSTIPATION.

By E. H. NEYMAN, M.D., Cedar Bluffs, Iowa.

The cogency of circumstances render the occupation of many students, mechanics, and men of business and letters necessarily sedentary. It is here we find habitual constipates most frequently; to appreciate how frequently, it is only necessary to glance at the enormous quantity of patent pills vended by empirics, for the cure of this disorder. It is with the hope of cor-

recting this wholesale use of cathartics that this communication is written.

Etiology.—It is only by a true understanding of the nature of disease that we can come to any rational mode of treatment. And rationalism—initiated by Descartes—must be the foundation of medicine. Without this, medicine ceases to rank as a science, for it ceases to have any sound or permanent basis. Constipation may arise from these causes:—

1st. Deficient contractility in the intestinal muscular coat.

2d. Deficient secretion; *a*, mucus, *b*, biliary.

3d. Obstruction of the passage of bile, by biliary calculi or other foreign matter, in the ductus communis cholidocus; by inflammation and œdema of intestinal orifice of bile duct; or by polypi.

Of these the second produces temporary but seldom, I conceive, permanent habitual constipation; the third is very rare; the first, then, must cover by far the greater number of cases. Let us take a brief peep into the region of pathology, and see what theory says in respect to this vast catharticism. Tonicity and irritability are the two inherent characteristics of muscular fibre. On this tonicity depends the vigor, and on the irritability its readiness, to react under various stimuli. What, in reference to these two functions, is the condition of the muscular coat of the intestine? Its tone and irritability are impaired; it fails to take cognizance of its natural stimulus, the feces. This lack of peristaltic action, constitutes a state of semi-paralysis. The property of healthy irritability has very narrow boundaries; if exhausted by over stimulation, recovery, under disease, is made still more doubtful. The vital stimuli, air, food, etc., renovate the tissues without exhaustion, but cathartics, while they may cause reaction, never directly increase vital force. If stimulation is the primary result, its good effects are lost in secondary sedation. If the intestine is stimulated into a renewed action, it subsequently relaxes into greater torpidity. These principles which regulate the action of medicines and pharmacological substances, are well understood by the profession. If, after the administration of a cathartic, we could re-

move the sedentary habits, substitute proper healthful exercise, pure air, laxative diet, etc., to raise the depressed vital power to a healthy standard, until the lagging recuperative powers could establish its permanency, all would be well. But this, in the greater number of cases, is impossible; the patient's avocation is sedentary, and on that he depends for his own and the sustenance of his family.

Pathology.—From what has been said under the head Etiology, it is clear, we think, that the pathological condition present, is deficiency in tone and irritability of the intestinal muscular coat.

Symptoms.—Deficient defecation, of course, is the certain index, but there are symptoms which are obscure. A. will complain that he is bilious; B. of dull, constant, and distressing cephalalgia; C. of an inability to apply himself closely to his studies; D. that he "aches all over," etc.; all of whom will apply for remedies for these symptoms, as one is more prominent than another, when, the fact is, all are suffering from the same disease.

Prevention.—"An ounce of prevention is worth a pound of cure." We must abstain from erroneous habits, use a vegetable diet, coarse bread, exercise in the open air, and above all, attend promptly to the calls for defecation.

Treatment.—Cathartics have been resorted to by the profession generally. To illustrate their deleterious effects we will suppose a case. A.'s habits are sedentary, there is engendered a torpidity of the intestine, which brings on a train of distressing symptoms; it wont do to depend upon nature, she is inadequate; healthful exercise is impossible; coarse diet insufficient; it wont do to wait—*rusticus expectat dum defluat annis*. A physician is consulted, who either recommends some favorite patent nostrum—through convenience, or prescribes a dose of comp. cath. pills. The torpid and forgetful intestine is stimulated into an increased action, a copious evacuation is the result of its primary operation. The difficulty is corrected for the time, but the debility is increased, and it is soon found necessary to renew the stimulus, each successive dose multiplying the

difficulty, and rendering the period between the doses shorter, so that at first it was only required semi-yearly, it becomes monthly, weekly, nay, every evacuation has to be solicited by some cathartic. So that, although it may be capable of unloading the intestine, and relieving the present difficulty, it but increases the cause.

If cathartics are so contra-indicated, what shall we say of laxative fruits, beverages, and aliment? These we believe to possess a different *modus operandi* from cathartics. Some act mechanically, others by being easy of digestion, still others by imparting tone to the gut. If some act similar to cathartics, their stimulation is of minor degree, as also their subsequent depression, hence are infinitely preferable to purgative medicines. From the pathological condition pointed, if we wish to perfect a cure, we must seek some agent whose action aims to elevate depressed irritability, gradually and slowly to the proper standard, imitating and aiding the natural recuperative powers, and characterized by permanency of action, like the vital stimuli. Something that will relieve the state of semi-paralysis. In reviewing the therapeutic effect of our various medicinal agents, we find none so capable of filling this indication as strychnia; and experience has demonstrated to me that its practical benefits are equal to its theoretical convenience. This substance appears to act principally on the *ganglionic system of nerves*, and the spinal column as high up, according to Flourens, as the medulla oblongata. To illustrate its applicability in derangement of the digestive function, let us take dyspepsia as an example, a disease which, like habitual constipation, is plainly dependant on a weakened condition of the digestive organs. Their action in nutrition and assimilation owes their nervous influence to the *ganglionic system of nerves*, the system particularly under the influence of the various species of the strychnos. The extended sympathy of the digestive apparatus necessarily radiates an influence over the whole economy, causing general weakness, uneasiness, and a host of highly distressing symptoms. The stomach and intestine are intimately connected with the great solar ganglion of the *ganglionic system*; hence, if we derange

these organs, we destroy the equilibrium of function, and deaden, more or less, the action of this entire system of nerves. Says a recent writer, in reference to the influence of the strychnos: "It has a tonic and stimulating influence over all the organs under the influence of the ganglionic system of nerves, by acting directly upon them, and exciting and equalizing their weakened action, and consequently restoring to equilibrium the digestive functions." My attention was first called to it by Dr. N. S. DAVIS, as a remedy, who spoke of it very highly in his lectures. I was at that time, a student of medicine, my habits sedentary, my studies requiring too much time to give myself proper exercise. I was habitually constipated; suffering from all its dreadful consequences. Like the rest of the world, I resorted to cathartics, which afforded me temporary relief, but left me in a condition worse than ever. Convinced that such treatment was inadequate to a cure, if not absolutely injurious, I was very readily induced to try Dr. DAVIS'S suggestion, and was very much gratified by the result, which was a complete cure. The formula recommended by Dr. DAVIS, and since used by me, is:—*R.* Ex. hyosciamus,

Ferri sulphas, aa. gr. xxx.

Pulvis aloes,

Ex. nux. Vomica al. aa. gr. x.

M. Divide into thirty pills, one to be taken before each meal. This treatment to be persisted in until the constipation is overcome, and complete and regular defecation established. As adjuncts, I recommend the patient to exercise in the open air, as much as possible; to confine himself to a coarse diet; to attend promptly to all calls for defecation, and to make diurnal efforts to defecate. No case, ever so obstinate and distressing, but what has been promptly overcome by this treatment. Towards the completion of the cure, I modify my treatment by lengthening the interval between pills. The two cases, I was induced from what I conceived to be the pathology of the disease, and peculiar condition belonging to the individual case, to try the influence of electricity, by passing currents from the umbilicus to the coccyx, from one ilium to the other, etc. The first one,

was that of a shoemaker, aged 40. I passed the electrical currents for several times, without any manifest improvement. I then combined the strychnia, and imagined the improvement to be more rapid and marked than usual. This experiment was obscure, non-conclusive, and unsatisfactory. The second case, was complicated by paralysis of the bladder, to which the treatment was more particularly directed. Here, also, the two treatments were combined. By the use of catheter and persistent employment of the remedies, the patient's condition was gradually improving. This patient does not live in my section, having been seen while on a visit to the western part of this State, where he resides. In a case of paralysis of the sphincter, with irritability of the muscular coat of the bladder, decided improvement followed the use of strychnia and belladonna. In a paralytic patient, under treatment with *nux vomica*, the bowels are perfectly regular, although before the use of it there was constant constipation.

Hoping strychnia may prove as valuable a remedy in other hands as my own, I close this imperfect article.

ARTICLE XXI.

CHRONIC ORCHITIS, AND EXTIRPATION OF TESTICLE.

BY L. D. ROBINSON, M.D., Groveland, Ind.

In the month of Dec. 1861, I was called upon to treat the case of Mr. C. aged about 30 years, of nervo-lymphatic temperament; short in stature and stoutly built, possessing naturally great power of constitution.

History of Case:—In the month of September, of same year, he received an injury, consisting in a severe bruise of the left testicle, while attempting to mount a vicious mule. The morning following the receipt of the injury, he arose from bed with testicle much swollen, hot, and very painful—creating consider-

able symptomatic fever. He applied to a Dr. for medical advice. The Dr. pronounced his case an *hydrocele*, and treated it as such: thrusting his troechar to the centre of the gland.

The result was, that the Doctor's treatment augmented the trouble, increased the inflammation and suffering. The patient then changed physicians, and the new Dr. treated the ease by warm emollient poultices, locally, and anti-phlogistic treatment constitutionally.

By this treatment suppuration was prevented at the time, and the gland passed into the chronic form of orchitis, with much enlargement, induration, and discoloration. The patient's general health began to give way, at this time, and he gradually sank into a cachexy of constitution.

He left Illinois in the month of Nov. following, and came into the neighborhood where I was then practicing.

Condition at the time of my first Examination:—Testicle enlarged to about four times the natural size. Scrotum covering the gland of very dark purple color, and much thickened. On examining the gland by palpation it was found to be quite hard and resisting. Sensation in the organ very much diminished—indeed, hard pressure upon the gland produced very little suffering. Patient's general health very much depraved—extreme debility, accompanied by functional derangements of almost all the organs of the body. And here I will digress enough to relate some circumstances connected with the ease that were quite significant:—About the time of my first visit to the ease, the patient received a slight injury upon the back of the left hand, which merely removed the cuticle off a small surface, which first assumed the form of an indolent ulcer, but subsequently formed the nidus of a semi-malignant fungus growth, which attained to the size of a hen's egg; meanwhile resisting all and every form of local treatment employed in the ease. I used nit. silver, nit. acid, nit. cupri, etc., etc., all without any good impression. About the same time, the great toe of the left foot became inflamed with an asthenic form of inflammation, passed on to suppuration and ulceration, and then a similar growth to that on the hand supervened. The toe, as the patient

informed me, upon inquiry, had been severely affected by chilblain, a few years ago, which rendered it a weak point. The scrotum also had upon its surface a small abraded spot, which assumed the same form as the hand and toe.

My first impression was that the gland would have to be extirpated; but the patient preferring medical treatment for his relief, I adopted the following constitutional treatment, knowing that it would put him in a much better condition for an operation, than he was at the time of prescribing it, any how:

R. Syrup sarsaparilla comp.5iv.
Iodide potassa,5ijj.

Mix. Dose:—a teaspoonful once in four hours. Alternating with the above sulphs. quinia and morphia.

Locally, I blistered the scrotum, and applied unguentum mercuriale.

Upon this management, the patient's general health improved rapidly, for about six weeks, and the gland decreased to almost half its former size, and in two weeks more, to almost its normal size.

But about this time, the patient took a long and fatiguing walk, which was speedily followed by a return of the local difficulty, and that in turn seemed to reproduce the same form of constitutional trouble, but in a milder degree. The same form of treatment, with the alteration of substituting strychnia for the quinia, after being employed a sufficient length of time, and seeming to do but little good, caused me to think that the difficulty was assuming a malignant form, and that the gland would probably require extirpation. But here two questions came up, viz.: Had the trouble not already assumed a malignant form, and if so, would an operation afford permanent relief? Or would not the wound, that would be necessarily inflicted in the operation, assume the same form of the wound on the hand and the toe?

While indulging my thoughts in this quandary, I wrote Prof. N. S. DAVIS, detailing to him the case, and asking his advice. His advice was to extirpate "at once;" and then give the patient the tinct. cinchonæ, and bi-chloride hydrargyri, in proper proportions and at proper intervals.

I followed the Prof.'s advice, and proceeded to extirpate the gland in the following manner:—

The patient having been placed in the proper position, and brought fully under the influence of sulph. ether and chloroform, aa., by my brother, Dr. J. H. ROBINSON, I proceeded to remove the hair from about the groin and scrotum, and then, with bistoury in hand, I made an incision, beginning just below the external abdominal ring, and terminating at the lower extremity of the affected gland, running parallel with and close to the raphe or median line of the scrotum. I then made a second incision, beginning at the upper portion of the testicle, and running parallel with the first incision, including all that portion of the scrotum that was sufficiently diseased to demand removal. Found the scrotum and testicle morbidly adherent, and the tunics almost completely obliterated, so much so, that surgical anatomy afforded me no guide in the operation. I then proceeded to carefully dissect the gland loose from its attachments, which I found to be somewhat tedious and difficult, owing to the change that disease had wrought in the structures, and the hemorrhage that was occasioned by the wounding of the distal extremities of the spermatic arteries.

But after getting the gland ready to sever the cord, and remove the testicle, I adopted the novel plan of ligating the cord, with the accompanying arteries and nerves, all together, and severing them upwards. I then proceeded to dress the wound in the usual way.

Reaction came up finely, with no fever or secondary hemorrhage, and with but little pain. Gave patient $\frac{1}{2}$ gr. sulph. morphia, and in two hours repeated the dose, which was the only anodynes I found it necessary to employ in the case. The patient did well, and the wound healed rapidly and kindly, with but little inflammation or suppuration.

The patient was able to be on foot within a month's time, from the date of the operation. The general health improved finely, under the influence of Dr. DAVIS's prescription, and the hand and toe became almost well, apparently.

This method of ligating I claim to be much better, safer, and

quicker than the method required by our standard surgical authors. They instruct you to first incise the cord and blood-vessels, and ligate afterwards, meantime trusting the cord to the hands of an assistant, while you separate the arteries from the cord and nerves.

1st. I regard it very unsafe to trust the arteries to the grasp of an assistant, before you tie them, lest they slip away and are drawn through the ring into the abdomen, and there produce a fatal hemorrhage.

2d. I regard it as wholly unnecessary to subject the surgeon to the tedious and troublesome task of carefully separating the arteries from the cord, nerves, and muscular structure, and tying them (the arteries) singly.

3d. I regard it just as safe, in every particular, and just as free from after suffering—much simpler, and less difficult to ligate arteries, cord, nerves, etc., all together, as it is to ligate the bloodvessels without including the spermatic nerves in the ligature. No more pain was inflicted in this case than there is in the usual operation of incising a nerve trunk, and the method of ligating, I am sure, is much easier than any other.

In conclusion, I would suggest that it is *possible* that this patient was laboring under a syphalitic taint of constitution; yet I have detailed the case as *it was*, and think it *very improbable*, as the character and veracity of the gentleman, together with his general appearance, rather discourages this conclusion.

ARTICLE XXII.

CASE OF EXTENSIVE INJURY OF THE HEAD.

By H. WANZER, M.D., of Chicago.

I was summoned to Mrs. Murphy, by officer Ensworth, on the night of the 14th May, at a late hour of the night. Found her on Chicago Avenue, lying upon the ground, in front of the house of Mr. Morrison, upon her face. Her head, face, and dress was completely covered with blood, so that I could not tell what

color she was. Her extremities and her surface were cold, showing that the blood had left the surface. The pulse was nearly impereceptible at the wrist. The loss of blood, together with the shock she had received by the injuries, had nearly induced a fatal prostration. She was, in a word, in a state of collapse. I ordered her to be taken into the house of Mr. Morrison; and there commenced my examination for injuries, commencing at the head, I found a transverse cut over the temporal bone, about four inches. The structures were divided to the bone. The second was a transverse cut over the parietal bone, the structures being divided completely to the bone. The third and fourth cuts were over the occipital bone; one was perpendicular, the other transverse, about four inches each, dividing the structures completely to the bone, ripping up occipito-frontælis muscle from the bone, for the space of three and a-half inches, making rather an unsightly wound, in the form of a letter T. The perpendicular cut was a bad one, the instrument had penetrated the outer table and diploe of the skull, gouging it out as it were, so that I passed my index-finger freely over the inner table of the skull, the whole length of the cut, only that structure intervening between it and the brain. After cleansing the wounds from hair, and all foreign substances, I brought the parts in apposition by interrupted sutures, adhesive straps, and bandages.

Having finished about the head, I commenced looking for other injuries, and my attention was called to the right shoulder. I found it dislocated, the head of the humerus was downwards, resting upon the axillary plexus of nerves, and manipulating the arm caused her intense suffering. The shoulder, and arm its whole length, were intensely swollen; to the ends of the fingers the blood had infiltrated and extravasated through nearly the entire extent, and upon moving the arm, I heard distinct crepitus of bone, indicating that there was fracture in the neighborhood; and finding none at the arm or hand, I proceeded, assisted by officer Ensworth, to reduce the dislocation at the shoulder. I commenced by extension, which much relieved her, taking the pressure off those plexus of nerves. The dislocation

was a bad one, and it was reduced with difficulty; the head of the bone went into its old place with an audible snap, which relieved her at once. I then commenced further examination for the fracture, and found that it was the right scapula or shoulder-blade that was broken. I then placed a pad in the arm-pit, and adjusted a figure of 8 bandage, which met both indications of fracture and dislocation, and pursued my examinations for other injuries; found some of her front teeth knocked out, probably by the same deadly instrument. I also found two old fractures and cicatrices, done, she told me, by the same hands—her husband's. The first had been a complete fracture of the radius and ulna of the other arm; badly set and much deformed. The other was a fracture of the nose. The injuries she has received to her arms will impair her usefulness for obtaining herself and little ones a livelihood, if she ever recovers from them. Having done all I could for the poor woman, I left her for the night, leaving directions to have her carried home, expecting on my next visit to find her dead; but in the morning reaction was well established. The machinery of life, suspended for awhile, had commenced moving, and she has been convalescing ever since. She is a temperate woman, and of a good plastic diathesis. Her cuts about the head nearly all healed by the first intention, excepting the last. She is doing well.

I remarked that she was a temperate woman. Alcoholic drinks of all kinds retard the healing process. They change the essential properties of the blood, by diminishing its plasticity. They promote the suppurative diathesis. Wounds heal slowly and with difficulty after injuries or cutting operations, in those who habitually use them.

Army Correspondence.

PITTSBURG LANDING.

REPLY TO A SLANDEROUS ATTACK, PUBLISHED IN THE
CHICAGO MEDICAL JOURNAL, MAY NUMBER.

When the present war broke out, and forces were concentrated in numbers never before witnessed on this continent, serious apprehensions were felt for the outbreak of diseases, contagious as well as those so common with recruits in camps. Men of the highest moral and professional standing, therefore, united, and gave the first impulse to the organization of the Sanitary Commission.

Their agents visited the camps, travelled with unabated zeal and ardor over large territories, giving advice to the commanders, and to such medical officers as were not familiar with military hygiene and practice. Their pamphlets on camp policy, on the most frequent and important diseases, on operations, etc., were spread all over the land, and no doubt they accomplished a vast deal of good.

Important improvements in the medical department were adopted on their recommendation, and the establishment of "soldiers' homes" reflects great credit upon them.

Every army officer in the West must have made the acquaintance of Dr. Douglas, the man with an iron constitution and a heart burning with pure benevolence; or of Drs. Warriner and Aigner, highly qualified personages, also inspired by the purest motives.

In short, the Central Sanitary Commission proved itself very useful, and deserves the more credit for it, as in their half-official capacity their mission was a very delicate one. If in any instances they transcended their authority, they were rare and exceptional.

The liberality and benevolence of the American people manifested itself in a manner, and in a degree never before exhibited

by any other nation. Articles, not provided for by the army regulations, poured in in such quantities that large warehouses were required for their storage. A noble emulation between the loyal States, resulting in the amplest provision for all the wants of the soldiers. The Sanitary Commission was properly entrusted with the distribution of these gifts. The tree, thus grown up, spread its branches soon over most of the cities.

But the people in selecting their agents were not always very fortunate. We may easily bring them under three distinct classes:—

I. True men, patriotic, devoted with their whole soul to the noble cause they represent.

II. Those who go on an errand only for curiosity sake.

A battle field, after the smoke of the cannon has passed away, affords an exciting and interesting view. You can see these men marching over the field, gathering “*trophies*,” and returning loaded with limbs, and other trash.—Some few of the private physicians may be added to this class, who only come “to amputate.” The first and almost stereotyped question, “Is there any operations to be performed,” will often be answered in the negative by the surgeon; and if he, insulted by their too often assumed high airs, responds in a manner like this:—“If there is to be one, I shall send my own invitations;” they will retire in double quick.

Finally, there is a set of men, whose only object is to make capital out of it.—They claim the privilege of insulting every army surgeon who does not bow in devoutest submission to their pretended authority; and I simply ask, who could submit, without being an imbecile, morally or intellectually?

They form a kind of a mutual insurance company, writing occasionally complimentary and glorification letters for each other, as well as for themselves.

To increase the brilliancy of their light, they use the lamp-black very freely for blackguarding.

In their great hurry to have their glory published, they are not always very scrupulous about the correctness of their statements.

Fortunately, their number is not large; but as the members of the first class are generally very modest and kind, devoting all of their time simply to their benevolent objects, and finding no leisure to write hysterical articles for newspapers, their services are mostly overlooked by the outsider, and altogether overshadowed by the conspicuous position their opponents take possession of. These men are the cause of the Sanitary Commission becoming very unpopular among the army officers.

Everybody knows that the distribution of gifts is far more pleasant than the collection of the same; but the art to make presents acceptable is only taught by the most tender feelings of the heart. I always turned away in utter disgust when, to every article given to the poor soldiers, the remark was added: "This comes from the Sanitary Commission!" Why not say, if anything at all, "This comes from the loyal people of the North, from your friends; use it, and be happy!"

It may be mentioned here, that on the 18th of April, a letter from Rev. C. was published in the *Chicago Tribune*, giving an account of the operations of the Chicago Sanitary Commission. The author made some erroneous statements, which could hardly be otherwise in the pressure of a very limited time. Prejudiced, as it seems, in favor of that Commission, he bestowed more credit upon the members than they deserved; while the army surgeons, as a class, were charged with carelessness. At home, on sick leave, I felt myself in duty bound to a reply, correcting some errors, and defending the honor of the former, concluding thus: "It is laudable when citizens and private physicians leave their comfortable homes, or their practice, for a few days, to relieve the unfortunate victims of this war; but their praise must not be heralded at the cost of the army surgeons. And while, through the exertion the writing of this letter causes me, the hemorrhage of my lungs commences anew, I shall never, even when far away, cease to defend the honor of these useful men—men who live with the soldiers, march, suffer, and even die, with them."

This communication, dated April 19, was sent to the *Chicago Tribune* for publication; but my just and reasonable demand

was not granted. I then asked for the return of my manuscript, but it was withheld, though postage stamps were sent. It found its way afterwards to the public through the liberality of the *Missouri Republican*, where it was published on the 2d of May. It was never responded to.

But in the *Chicago Medical Journal* appeared an article, headed "Pittsburg Landing," and signed "R." containing the grossest attack upon myself and a colleague of mine. Its spirit and language will contribute a rare sample to the *Ethics* of our time, and it ought to be preserved at Barnum's.

The author is *Dr. Rea, of Chicago*. In his threefold dignity as lecturer in Rush Medical College, as contributor to the *Chicago Medical Journal*, (the organ of said college,) and as *Sanitarian*, he ascends the Olymp and hurls his thunderbolts in a terrible multitude upon us poor mortals. I had the honor to receive a full shower of them, cold, however, and harmless they were.

The gentleman seems to be unaware that this kind of pyrotechnics are "played out," and that such artists burn their fingers occasionally with the same rockets they designed for others.

Living in a skeptical century, rational people are accustomed to respect in science nothing short of *brains*; the mere prestige of a professorship, even in Rush Medical College, belongs to those illusions that were.

I deny the ability of Dr. Rea to judge about me, at all events, if he had even an opportunity for it, which in fact he had not. His very first statement is utterly false. He says, "The boat (Hiawatha) was under charge of Dr. Roskoten." I had no more charge of her than of the St. Charles Hotel, where I am now detained from joining the army, in consequence of the injuries received at Shiloh.

Here is a synopsis of the incidents before and after the arrival of the Chicago Sanitary Commission:—

I arrived at Pittsburg Landing on the 4th of April.

Sunday morning, April 6th, the battle commenced.

Dr. Hewit, the senior medical officer, was acting medical director. I repaired to the medical purveyor's office, to ascertain the condition of the medical supplies.

Answer. Hardly anything ; not a grain of opium or morphia.

I then rode to the battle field. About noon, I was struck by a spent piece of shell, in my right side, and at the same time, my horse was killed under me, by a cannon ball. He fell upon me with great force, and it was sometime before, by assistance, I could be extricated. Carried to an ambulance ; I was conveyed to *my quarters* on board the Hiawatha.

She contained the commissary stores ; the staff of our division (2d) were also quartered there ; and we *paid for our board*.

During the day of the battle, a number of wounded officers were brought on board ; and before evening some 70 or 80 were quartered there. Though suffering with pain, with profuse hemorrhage from my lungs, and quite lame, requiring surgical attendance myself, I could not resist my desire to relieve the sufferings of my comrades. No surgeon being present, I attended to all of the wounded on board, and I had the satisfaction, of enjoying the gratitude of all of them, notwithstanding the *kind* remark of the very learned professor, "when it was found out that he was incapable of taking care of himself even." True, I did not take proper care of myself in view of the suffering of others, and herein is the cause of my own protracted suffering, and of the probability of never recovering again.

During the full six days, there occurred only one case of death on board the Hiawatha. A minnie ball had caused fracture of the femur, and mortification was present when the man came on board.

The sixth day of hard toil had nearly passed away, when the Chicago Sanitary Commission arrived. They came with a large force of surgeons and some nurses.

The next day, when I was preparing to leave the boat, in order to change my quarters, and to find the rest I needed so much, Dr. Hewit came on board, and stated that this boat was designed to carry wounded men to Mound City Hospital. He *asked me to take charge of her*, as I had to go on sick leave the same way, and as he would rather see the boat in charge of an army surgeon.

Bothered by the new-comers, for medicines and hospital stores,

and knowing there were none to be had, I made out my requisitions however, first in the proper form, then on a rag of paper. I never saw my papers again, nor medicines, with the exception of a few trifling articles.

Pressed from a certain side to make requisition for an unreasonable amount of rations, I refused my signature, and asked first for a written order to prove my authority. Then I drew the rations in quantities as I thought proper. The learned Dr. seems to know very little of military matters, and may call it "red tape" if he chooses. So much for the hospital stores and rations.

By a mere act of courtesy, I transferred the directory of the medical department to Dr. Rea. I preferred then to be as little official as possible.

Now, the very learned professor says, "The only operation I saw him perform, was trying to squeeze pus from an edematous eyelid." Indeed, Sir.

In passing through the cabin, my attention was attracted by the continuous screaming of a patient. A small ball had entered near the left eyebrow. The eyelid was edematous, the tension enormous. He was crazy with pain, and utterly refused an examination. Stimulated by the desire to relieve this poor fellow somewhat, I scarified that eyelid, and tried to promote the exit of serum and blood.

But as the learned professor seems to have a desire to challenge me in the professional arena, I will lift his glove. In doing so, I may be permitted to publish some of the antediluvial surgery practiced on board the *Hiawatha*. In passing through the wards to my state-room, some of my former patients complained bitterly of pain. Inquiring for the cause and the treatment, they stated that the cold water dressing had been used. This was done on the 7th day after the injuries, when suppuration and sloughing was fully established.

A private, a German, came on board a few hours before the Commission arrived. Gun-shot, fracture above the knee. Having used all my own splints, I requested Dr. Gillette to attend to this important case. He kindly applied the splint. In pass-

ing by the next day, Dr. G. stopped me, the splint was removed. With an almost shy reluctance, he stated to me "That some of the physicians had declared there was no fracture." It was a plain case, every layman, with common sense, could see it at once, and crepitation was audible from a distance. I referred him to Dr. Rea, and a splint was applied again. Comments unnecessary.

An officer, shot in the back, his lower extremities paralysed, also the sphincter ani and bladder. The ball being inextricable, lodged in the spine, I had nothing to do but to use the catheter twice or three times a day.

Now, the *Master* performed an operation, the impression of which will last, it was daguerreotypied, graphie. An incision had been made; he held in one hand a forceps, and the other hand disappeared. It had gone downwards as in a pocket, in search for the ball; as I heard and expected, without success.

These few cases may serve as samples of the author's "rich treats," belonging to his "surgical feast," (page 280). The very learned gentleman, disappointed in not having received the charge of the boat, felt badly, and more so, when he found out that "a Dutchman" was entrusted with that office.

But, *me Hercule!* There comes yet another Dutchman! "And when it was found out by the Med. Director that he was incapable of taking care of himself, even—he added insult to injury, by sending a Dutch assistant-surgeon to supervise him."

That cruel Medical Director!—And to whom was the insult and the injury directed? I should think, against myself, if the matter had been really so. The author seems to be very anxious to exhibit his great force in logic. But I will not do wrong to him; perhaps that meanwhile that man's other eyelid became edematous, and that this Dutch assistant-surgeon only came to squeeze also pus out of it!

The truth is this: when the Medical Director found out that Dr. Roskoten had been wounded in the Battle of Shiloh; that he had, notwithstanding his own sufferings, voluntarily attended to the wounded on board the *Hiawatha* for full six days; and when he further heard that the same Dr. was outworn, suffering

by hemorrhage of the lungs and lameness, so that he was incapable of going ashore after the provisions and stores, he acted very kindly in sending a very respectable medical officer to assist him in attending to these matters. It was Dr. Stahl, of the 10th Illinois.

On Saturday noon, I took charge of the boat; it was dark when we took in the last patients, and some 60 cots, from another boat. The number of sick and wounded were about 260.

As a great number of sick and wounded remained in tents, partially on wet soil—as I was informed, I considered it my duty to receive as many of them as I possibly could. The only difficulty was to get them on board that night. It was very muddy, the hills steep, and the wounded on top of them, at some distance. The conference with surgeons present, declared the transportation and the exposure for the wounded too difficult and dangerous; but I expected to succeed *the next morning* in bringing the balance of patients on board, as Captain Carson also stated that his pilot refused to go by so dark a night, unless he be compelled to lie by;—as far as I recollect he named the bridge.

The banks of the Tennessee River swarmed, at that time, with guerrilla bands. Our yellow flag was no protection against such outlaws. There was nothing to attach us to Pittsburg Landing, a barren place. Outworn to death nearly, I needed the quiet and comfort of my home, but I could not leave that night. I had a far more valuable cargo on board than the homesick professor; there were 260 sick and wounded soldiers entrusted to my hands. Could I leave them to the mercy of such cruel bands? Did the Dr. expect me perhaps to pilot the boat? How many more qualifications does he ask of an army surgeon?

Early on the following morning, I had my nurses at work, the cots were displayed, and things commenced to look well. The boiler-deck, thoroughly cleaned, became the most pleasant place of the boat, it could have afforded room for more than a hundred patients; the weather was calm and pleasant.

While a messenger was sent ashore for more patients, Dr. Simons came on board, about 9 o'clock A.M., I observed at the

first glance that he had been influenced from a certain side. He asked me, shortly, why the boat was not on her way. I felt not inclined for any explanations, only stated my intention to receive more wounded men. He said, I had enough. His time being over-taxed in other places, he found no opportunity for examining the capacity of our large boat. Judging him by the past, I feel certain that he never used such language as the author alleges him to have used. He is a gentleman.

The Dr. says, further: "He (Dr. Simons) gave me the order. I carried it to the Captain, and we were off."

Not exactly so, Sir! With my permission the boat stopped alongside another boat *for several hours*, in order to take in a number of articles provided for by Dr. Douglas,—when I gave "the order, and we were off."

Why does the author not enter the army? If he could accomplish so much good in about 60 hours, why does he withhold his inestimable services from the nation's sickbed? Why does he not go at once before the U. S. Army Board? There is no want of vacancies. Quite a number of surgeons have resigned, outworn and with broken down constitutions, others were killed or wounded.

But it would not pay! And if there would be no ice in winter, or heat and dust in summer. But the worst of all is, that the self-planted laurels seem not to flourish so luxuriantly in the modest field of the army surgeons.

In recapitulating the whole article, his professorship seems to be so perfectly saturated with, and conscious of, his dignity as to feel himself an authority. This must of course proceed from his connection with Rush Medical College. The symbol of the medical profession ought to be changed; for Æsculap's serpent there ought to be substituted the snake of the Paradise, as the tree of knowledge seems, in the author's opinion at least, only to grow in that modern Eden, and mainly to root in the professor's chair. Teachers and pupils, from all other Universities, will have to come to him to be instructed in his "Ethics," and to learn wisdom.

There will be a pilgrimage to that sacred place; the lights of

Boston, New York, St. Louis, Edinburgh, and Paris will fade away before this star of the first magnitude, not to mention Berlin or Vienna, as there are but "Dutchmen" in the chair.

A glorious time is coming, indeed. To assist in the heralding of the professor's glory, I will present a few of his delicious fruits, deposited in the *Chicago Medical Journal*:

"The boat was under charge of Dr. Roskiton, of Gen. McArthur's Division. He is a German, and it is with some reluctance that I express my surprise that such a man can obtain the position he occupies. It convinces me that favoritism forwards more than merit. So far as I could judge, and it is the universal opinion of my companions as well, that he did not possess a single qualification for the place he filled. He was unable to get his outfit of stores; had the patients lying in utter confusion; and the only operation I saw him perform, was trying to squeeze pus from an edematous eyelid. When it was found out by the Medical Director that he was incapable of taking care of himself even—he added insult to injury by sending a Dutch assistant-surgeon to supervise him."

"The next day, (Saturday,) found us with our complement of wounded, near three hundred. We managed to get part of our army stores on board, and so far as any one of us could see, were ready to go. But it seemed almost impossible to get away. I asked our boat-surgeon what was keeping us; why not start Saturday night? He said the pilot did not want to start at night, and besides he had not enough wounded; if he started with so few, charges would be preferred against him. At that time every available point was occupied, except on the hurricane and boiler decks."

"In that condition, we stayed from Saturday until Sunday noon, with our two Dutchmen spinning around each other, as if practicing a new edition of the Lancers, until Director Simons came aboard, and I asked, what in humanity's name we were waiting for?—why these men, wounded and suffering, might not as well be lying in the Hospital at Mound City as in that boat? He could give no answer for the delay, except the stupidity of our asinine Dutchmen. I wish I could letter their hats. I

would substitute U. A. S. for the ones I saw them sporting. He gave me the order, I carried it to the Captain, and we were off."

Not quite so generous as the Dr. I shall not, nor can I reciprocate his desire to letter hats; he wore the U. S. very conspicuously, while I only used a citizen's hat, without that distinction, *my cap being torn on the battle field.*

But there are different ways of lettering things; it requires a very hot iron to brand a mule's back, while author's write their own epithets.

R. ROSKOTEN,

St. Charles Hotel,
CAIRO, June 21, 1862.

Brigade-Surgeon.

Selections.

EPILEPSY.

AFTER THE FRENCH OF HERPIN.

BY EDWARD SUTTON SMITH, M.D.

The idea generally entertained by the profession, that epilepsy is incurable; the prevalence of the disease in the United States, and its *curability* in France, have led me to translate the salient points of M. Herpin's celebrated work, with some additions drawn from my own experience in the treatment of this malady in America.

During a long residence in the French capital, and from a personal acquaintance with M. Herpin, who has now devoted more than thirty years to this disease *alone*, and whose practice is not only very great, but successful, I satisfied myself that epilepsy could be treated in the same manner, and with the same happy results, in this country. With the above slight introduction, I offer the following article, one of a series of two or three that I propose to write for the *American Medical Monthly*.

To show the estimation in which the work is held by the profession in France, I append the report of the committee chosen by the Institute to examine into its merits.

INSTITUTE OF FRANCE, *December, 16th, 1850.*

Report.—"Dr. Herpin, of Geneva, has forwarded, under the title of Practical Studies in the Prognosis and Treatment of Epilepsy, a work composed, first, of thirty-eight observations relative to epilepsy, collected by the author; then an estimate of the different circumstances of these thirty-eight observations. These original materials serve as a basis, enabling the author to give, upon many of the symptoms of epilepsy, new views, and to determine the value of these symptoms from the double point of view of the prognosis and diagnosis of epilepsy. He also makes use of these same facts to study and compare the influence which every condition of age, sex, constitution, as well as different antecedent or concomitant diseases, may exercise upon the greater or less gravity of epilepsy, and the possibility of its cure. He again studies, under the same conditions, the good or bad influence which may be exercised by hereditary descent, menstruation, pregnancy, the married or single state, the degree of individual intelligence, social position, and finally, the length of time that the disease has existed. The importance of the subject studied by Dr. Herpin, the severity of the method which he has followed, in order to observe and arrange the facts, and lastly, the interest of many of the results which he has attained, have appeared to the Commission to merit a reward of fifteen hundred francs."

Every reflecting physician, when present at the cure of any disease, is compelled to demand what has been the influence of the treatment he advised. The reply, with the exception of a small number of cases free from difficulties, is environed with some doubt, unless the physician be endowed with a philosophic spirit. Consequently, this doubt, up to a certain point, surrounds all the precepts that direct practical medicine. By what means can we cause this uncertainty to disappear, and elevate therapeutics to a true science? We have already remarked, whatever may be the number of successful results, that some special means has procured you in the treatment of a disease, you cannot affirm the utility of your course, and still less, place any value upon it, except in proportion as you can show that this disease, if left to itself, would have had different and less favorable results. In theory, the means of comparison can only be furnished by a natural and complete series of facts where the affection was left entirely to the efforts of nature. Now, there are but few cases where this purely passive observation is possible. Thus, forced to have resource to more direct means in the midst of agents indefinitely varied and often contradic-

tory among themselves, that are employed in diseases, it is not presumable that if some are effacious, others are inert, and some hurtful? Thus, may we not conclude that a numerous series of facts, selected without reference to the methods of treatment, will give results which, admitting them to be a little more favorable than those of simple expectation, will not differ in any very marked manner? Consequently, may we not hope that at some future day we shall have a standard in each disease which shall serve as a common measure for all therapeuties upon the same disease? We have never doubted that this hope could be realized at some future day, for science already holds the elements of this work for a certain number of diseases. Meanwhile, nothing approaches nearer the wished-for guage than the comparative examination of opinions that have already been given upon the prognosis of a disease by a number of practical authors, chosen in different places and at different times, among the most skillful and conscientious.

The complete absence of statistical information upon the prognosis of epilepsy obliges us to resort to the latter means; fortunately, this affection is one of those where gravity, when left to itself, is so well known, that exactitude will not be required.

The prognosis is either general or special.

It is *general* when limited to the calculation of ordinary chances, the cure, and mortality of a disease. The general prognosis of an affection is obtained by combining the results of a series of numerous facts. These results, particularly if they are expressed in numerals, will serve to show the actual merit of any treatment that has been employed in an entirely different series.

The questions that may be raised in the general prognosis of epilepsy, it appears to us, may be reduced to the three following:

Can epilepsy be spontaneously cured; and if so, what is the ordinary proportion of these cures?

Has medical skill any influence upon the favorable termination of this malady, and what are the limits of this influence?

In incurable cases, what are the results of this affection?

1st. We shall find in the history of medicine incontestible proofs that epilepsy has cured itself, though this fortunate result appears somewhat rare, according to Maisonneuve—about 4 in 100.

2d. According to the opinion of authors, it is well known that medical treatment has cured a certain number of cases of epilepsy.

3d. Without furnishing us with any very exact results in the

cure of incurable epilepsy, our historical documents warrant our asserting that this malady is not incompatible with the prolongation of life, but that it shortens its length, altering more or less profoundly the intellectual and moral faculties.

Of the three questions that we have above mentioned, that which is the most important for us is the first, which treats of the spontaneous cure of epilepsy. We have seen that this result is quite rare, and estimating it at the rate of 4 in 100, we shall not be far from the truth.

In our examination, we shall consider separately two partial series of our own; the 38 cases of our first series we divide, according to their termination, as follows:—

First Category.—Three cases where the treatment was only followed two or three days. One of these patients left my clinic; the two others remained epileptic, one being an idiot.

Second Category.—First Section.—Two patients who were not treated, but spontaneously cured; one having had attacks for five years; the other, subject to turns of vertigo, after having but one in four years, has not had another for four years.

Second Section.—Seventeen cases that were treated, which is exactly half of the 33 patients that were more or less under treatment.

Third Category.—First Section.—Three patients whose condition was ameliorated, though they only followed an incomplete treatment, and would probably have been cured had they been more persevering, judging from the results produced by the remedy when taken in an insufficient manner.

Second Section.—Four individuals in whom the treatment having been properly followed, evidently extended the interval between the attacks without causing them to disappear.

Fourth Category.—Nine cases, all obstinate.

The figures in these four categories afford us the following conclusions:—

1st. Of 38 epileptics, 2 were cured without the aid of art: which gives the proportion of spontaneous cures in 19 cases, of about 5 in 100, which differs but little from the facts stated by Maisonneuve—4 in 100.

2d. Of 33 epileptics that were treated, 17, or 51 in 100, were cured; 7, or 21 in 100, were ameliorated; 3 of these by an incomplete treatment; 9, or 27 in 100, experienced no benefit under the influence of prolonged and varied treatment.

Thus, the number of our cures (without taking into consideration those two who were ameliorated, two of whom, at least, very nearly approximated the cured,) is one half. But the

more these results differ from the opinion of the immense majority of practitioners, the more necessary it will be to answer in advance those objections that will be raised against these conclusions.

No one will dispute our obstinate eases; let us leave for a moment those who were ameliorated, and examine those eases that were cured. To these it may be objected:—

That our diagnosis is wanting in exactness.

That our patients were cured by the interposition of nature alone.

That our cures were only greater or less suspensions of the accession, bearing in mind the returns which we call relapses.

1st. As to the exactness of our diagnosis, we merely ask any impartial man to look at the notes that accompany our observations, and read the chapter on the classification of the paroxysms. They will see that we have carefully studied the distinction between epilepsy, cerebral congestion, hysteria, etc.

2d. To those who merely see spontaneous cures in our eases, we place before them the prognosis of epilepsy, as given by all authors, without exception.

3d. This only remains, and will be the most specious objection of those who regard our cures as a simple postponement of the attacks. We will place before them a synopsis of our eases. Let us commence by the eases to the number of eleven, where there was no relapse.

Observation 7.—Duration four years; constant vertigoes every day; four attacks in three months, three of which took place in eight days; many suspensions by treatment during four years, the longest of which was eight months. Absolute cure, which has lasted *more than thirteen years*—(30th Nov. 1837, to the end of Sept. 1850.)

Observation 8.—Duration, five months; at the close many are daily. Cure, which has lasted *more than twelve years*—(March 13th, 1838, to the end of September, 1850.)

Observation 11.—Attacks during three months, many times monthly before the treatment. Cure, which has lasted *more than six years*—(August 16th, 1844, to the end of September, 1850.)

Observation 14.—Many paroxysms daily for fifteen days. Cure, which has lasted *more than five years*—(June 24th, 1845, to the end of September, 1850.)

Observation 15.—Two paroxysms and several vertigoes for a month. Cure, which has lasted *about five years*—(October 25, 1845, to the end of September, 1850.)

Observation 10.—Vertigoes for ten years, many in a month. Cure, which has lasted *about five years*—(November, 1845, to the end of September, 1850.)

Observation 20.—One single attack. Cure, which has lasted *five years*—(September 30th, 1846, to the end of September, 1850.)

Observation 22.—One single attack. Cure, which lasted *till the death of the patient, more than three years*—(October 14th, 1846, to November 13th, 1849.)

Observation 6.—Attacks for ten years; greatest interval, two months. Cure, which lasted *till the death of the patient, twenty-seven months*—(December 27th, 1840, till the 16th of March, 1843.)

Observation 18.—About one attack a week for three months; greatest interval, fifteen days. Cure, which lasted *till the death of the patient, more than five months*—(October 7th, 1849, to March 2d, 1850.)

If any one will compare, in the case of those patients that have not died, the time that has elapsed since the last accession up to the close of my observations, with the ordinary interval of their attacks, it does not seem to me possible that any person can suppose that these are mere postponements in the course of the disease.

Let us now see if our cases of relapse are not really cures. They are six in number.

Observation 9.—Frequent vertigoes. Cure, lasting *seven years*. Relapse: more and more frequent vertigoes for a year, then an attack. Cure, (excepting a few turns of vertigo, which have ceased for the past four years,) which has lasted *more than nine years*—(September 30th, 1841, to September, 1850.)

Observation 12.—Three attacks in three months. Cure, which has lasted *six years*. Relapse: two consecutive attacks. Cure, which lasted *five years and a-half*—(March 16th, 1845, to the end of September, 1850.)

Observation 13.—Three incomplete attacks in sixteen months. Cure, which lasted *twenty-six months*. Relapse: a single accession. Cure, which has lasted *six years and a-half*—(February 19th, 1844, till September, 1850.)

Observation 48.—Commenced at the age of 16 years, (1812,) five years before the first menstruation. For six years, one or two attacks of epilepsy a week. Once had forty-eight in twenty-four hours, the consequence of bad treatment. At long intervals, some attacks of hysteria. Suspension of the attacks for three years, owing to some treatment of whose composition she

is ignorant. Relapse, (1812): for six years, two of three attacks every week; the longest interval being three weeks, (not counting three pregnancies, during which they completely ceased.) Attacks were more frequent at the menstrual periods. From 1828 to 1829, not a single accession: then two paroxysms of attacks in eight months. For four years and a-half, isolated attacks, usually returning at an interval of about a year or eighteen months. In July, 1835, complete relapse, in consequence of a year's imprisonment: for ten months, attacks almost daily; some ten or twelve in the same day. Six months after this relapse, I treated her four months. Cure, which, with the exception of two consecutive attacks in September, 1836, lasted till the death of the patient from an ovarian cyst, the 2d of August 1850, *fourteen years* after the last attack.

Observation 62.—When this young girl came to my clinic, she had already more than 1200 attacks, preceded, for five years, by frequent vertigoes, that had been gradually converted into accessions; these latter had, in their turn, been transformed into attacks, and are not comprised in the above account. During the first five months she was under my treatment, the number of attacks was exactly two a day. To-day (December 24, 1851), this young girl, after having had only eight attacks in seven months, has been completely free from them for more than four months. Though half idiotic at the time of her first visit, she now enjoys the full use of all her faculties.

Out of 48 patients,

26 were cured.....	54	in 100
10 ameliorated	21	“
12 incurable	25	“

From all which we deduce the result:—

1st. That generally epilepsy is not spontaneously cured, nor does it take place in a twentieth part of the cases.

2d. That medical skill can benefit three-quarters of those who suffer from this terrible malady; that it can *cure* more than one-half, and produce a greater or less amelioration in a fifth part of the cases; and that the proportion of incurable cases is only one-quarter.

The criterion for epilepsy is found in the total number of attacks or accessions that the patient has had.

In the case of patients that have not had vertigo, or if they have not been very frequent, nor lasted more than ten years, we may be almost certain of effecting a cure.

As regards the attacks and accessions, the prognosis is entirely favorable, if the number has been less than 100.

From 100 to 500 the chances are less favorable.

The prognosis is unfavorable if the attacks have been more than 500, and in such cases a cure can only be regarded as an exceptional case.

If it can be established that recent epilepsy is almost always curable, to render humanity an immense service, it is only necessary that the world should know the power of medical skill when taken in time; and every physician should be convinced, that with confidence, exactitude, and perseverance, in the great majority of cases he may be assured of success. To attain this double object, every influential man, whatever his sphere of action, from this time forth, should endeavor, as far as epilepsy is concerned, to popularize the advice given by the poet:—

Principiis obsta, sero medicina paratur,
Cum mala per longas invaluere moros.

10 UNION SQUARE, NEW YORK. —*Amer. Med. Monthly.*

THE SARRACENIA PURPUREA, A REMEDY FOR SMALL-POX.

To the Editor of the American Medical Times:—

SIR:—You have by this time, in all probability, heard something of an extraordinary discovery for the cure of small-pox, by the use of “*Sarracenia Purpurea*,” or Indian Cup, a native plant of Nova Scotia. I would beg of you, however, to give full publicity to the astonishing fact, that this same humble bog-plant of Nova Scotia is the remedy for small-pox, in all its forms, in twelve hours after the patient has taken the medicine. It is also as curious as it is wonderful that, however alarming and numerous the eruptions, or confluent and frightful they may be, the peculiar action of the medicine is such that very seldom is a scar left to tell the story of the disease.

I will not enter upon a physiological analysis now; it will be sufficient for my present purpose to state, that it cures the disease as no other medicine does—not by stimulating functional re-agency, but by actual contact with the virus in the blood, rendering it inert and harmless, and this I gather from the fact that if either vaccine or variolous matter be washed with the infusion of the *Sarracenia*, they are deprived of their contagious properties. The medicine, at the same time, is so mild to the taste that it may be mixed largely with tea or coffee, as I have done, and given to connoisseurs in these beverages to drink, without their being aware of the admixture.

Strange, however, to say, it is scarcely two years since science and the medical world were utterly ignorant of this great boon of Providence; and it would be dishonorable in me not to acknowledge that had it not been for the discretion of Mr. John Thomas Lane, of Lanespark, County Tipperary, Ireland, late of Her Majesty's Imperial Customs of Nova Scotia, to whom the MecMac Indians had given the plant, the world would not now be in possession of the secret. No medical man before me had ever put this medicine upon trial; but in 1861, when the whole Province of Nova Scotia was in a state of panic, and patients were dying in the hospitals at the rate of twelve and a-half per cent., from May to August, Mr. Lane, in the month of May, placed the "*Sarracenia*" in my hands to decide upon its merits; and after my trials then and since, I have been convinced of its astonishing efficacy.

The Indian Cup is found in swamps and moss bogs. Its capacious globular receptacles are generally filled with cool, bland water. The Cups are lined with bristles pointing downwards, that entangle the flies that come to drink, so that few escape drowning. It is a very curious and remarkable family of plants exclusively North American, and not to be met with west of the Alleghanies. The leaves take the form of a long bulbous tube or funnel, like the bowl of a tobacco-pipe, terminating with a hood-shaped appendage not unlike an Indian squaw's cap. The flowers, with their hard involuted crenate calyx, and fine sessile segments, like the yellow water-lily, deep crimson stigmata, and corresponding stamina, in form and appearance are very remarkable. All of the tribe inhabit marshy grounds. The "*Sarracenia Purpurea*" is the most common species, and like all the beautiful things of Providence, widely diffused from Hudson's Bay to the State of North Carolina.* The root consists of numerous short radicles, fibrous and stringy, which when powdered, have a very faint and agreeable aroma, with a taste very like the willow alkaloid, or salicin. The dose of the medicine—the powdered root—is about a dessert-spoonful, simmered in a pint of water down to half a pint; this is divided into two doses, one taken immediately, the other in six hours; no sugar should be given with it. The only functional influence it seems to have, is in promoting the flow of urine, which soon becomes limpid and abundant, and this is owing perhaps to the defecated poison or changed virus of the disease exclusively escaping

*[The *Sarracenia Purpurea* grows in the swampy lands of New Jersey, and is called the "Pitcher plant," and "Side-saddle flower;" Griffith does not mention it in his "Medical Botany." Various southern species exist, and two of these are noticed in the U.S. Dispensatory.—ED. AM. JOUR. PHARM.]

through that channel. The "Sarracenia," I take reason to believe a powerful antidote for all contagious diseases, lepra, measles, varicella, plague, contagious typhus, and even syphilis, also a remedy in jaundice. I am strongly inclined to think it will one day play an important part in all these. Yours, etc.,

FREDERICK W. MORRIS, M.D.,

Resident Physician of the Halifax Visiting Dispensary.

—*Am. Med. Times*, May 24, 1862.

OILED PAPER, AS AN ECONOMICAL SUBSTITUTE FOR OILED SILK IN SURGICAL DRESSINGS.

During a visit to England and Scotland, in the summer of 1860, I noticed in the Glasgow Royal Infirmary that they used an *oiled paper* as a substitute for oiled silk, in surgical dressings. The article was invented by Dr. McGhie, the Superintendent of the Infirmary, and possessed many advantages besides that of being economical.

The following is the mode of preparation:—Take good "tissue" paper, free from holes, as many sheets as may be required; boiled linseed oil, say one quart; to which add one ounce of sulphate of zinc, and re-boil for an hour or longer. A little beeswax and turpentine may be added, while the oil is hot. Use a square board, larger than the sheet of paper. Coat the first sheet on *both* sides with a paint or paste-brush; the rest of the sheets only require to be coated on one side, as the oil strikes through. Place the second sheet on the top of the first, slightly projecting at one end, for convenience of lifting, and so on, *seriatim*. When all the sheets are coated, hang them up to dry in a moderately warm place, for twenty-four hours. When taken down, each sheet may be dusted over with French chalk, which will prevent them from adhering. If sufficient wax and turpentine have been used in the mixture, the chalk dusting will not be needed.

Dr. McGhie, in his pamphlet, claims the following advantages for oiled paper as compared with silk:—

1. *Economy*.—A sheet costs from one to two cents only.
2. *Transparency and lightness*.—Applied over a stump or other cut surface, when hemorrhage may be feared, the state of the part can be more readily seen. On account of its lightness, it is particularly useful in covering extensive burns.
3. *Adaptability*.—It can be nicely applied to any part, retaining the form impressed upon it. It is easily torn, while, at the

same time, it can be made of any required strength by doubling or trebling it.

4. *Safety*.—The great objection to oiled silk (or even to gutta percha sheeting), is, that the expense tempts us to use it over and over again; and in this way disease is propagated. There would exist no such temptation with oiled paper, as it could only be used *once*, and all risk of contagion in this way would be avoided.—*Boston Med. & Surg. Journal*, Feb. 20, 1862.

W. S. B.

CHLORIDE OF LIME AS AN INSECTICIDE.

In scattering ehloride of lime on a plank in a stable, all kinds of flies, but more especially biting flies, were quickly got rid of. Sprinkling beds of vegetables with even a weak solution of this salt, effectually preserves them from the attacks of caterpillars, butterflies, mordella, slugs, etc. It has the same effect when sprinkled on the foliage of fruit trees. A paste of one part of powdered chloride of lime and one-half part of some fatty matter, placed in a narrow band round the trunk of the tree, prevents insects from creeping up it. It has even been noticed that rats and mice quit places in which a certain quantity of chloride of lime has been spread. This salt, dried and finely powdered, can, no doubt, be employed for the same purposes as flour of sulphur, and be spread by the same means.

—*Chem. News, London, from Dingler's Polytechnisches Journal.*

Book Notices.

AMERICAN JOURNAL OF OPHTHALMOLOGY. Vol. 1., No. 1. By JULIUS HOMBERGER, M.D., Editor and Proprietor. New York.

We have received the first number of this new Journal, devoted wholly to the consideration of diseases of the eye. It is a Monthly Journal of 48 pages, printed on good paper, and in good style, by Bailliere Brothers, 440 Broadway, New York. We cheerfully welcome it to our exchange list, and commend it to the patronage of the profession.

A PRACTICAL GUIDE TO THE STUDY OF THE DISEASES OF THE EYE: THEIR MEDICAL AND SURGICAL TREATMENT. By HENRY W. WILLIAMS, M.D., Fellow of the Massachusetts Med. Society, Honorary Fellow of the Rhode Island Med. Society, Member of the American Med. Association, etc., etc. Boston: TICHNOR & FIELDS. 1862.

This is a small sized octavo volume of 317 pages. The publishers have done their part of the work in excellent style; and though we have not had time to examine the contents of the work carefully, we have no doubt but it is a very valuable practical treatise. And from its conciseness, it will be found one of the most convenient, as well as reliable, works that the practitioner can obtain.

The following paragraph from the preface will convey a good idea of the work:—

“It has been the aim of the author to avoid encumbering his work, and confusing the reader, by the introduction of merely exceptional details,—by an account of every proposed but exploded mode of treatment, or by more than the most sparing use of the too learned technical designations which abound in ophthalmic literature; but he has endeavored to give clear and explicit descriptions of the usual forms of disease, so that the physician may be able to recognize, at once, their distinctive features,—and to define the course of treatment best adapted, in a majority of cases, to remove the morbid condition. Some affections, and certain phase of disease, of rare occurrence and trivial importance, will be merely alluded to; enough being said, however, to enable the reader to detect their character, as exceptional cases, and to allow him to consult other works, at his leisure, should he wish for complete information regarding them.”

The book is for sale by S. C. Griggs & Co., of this city.

ON MILITARY AND CAMP HOSPITALS, AND THE HEALTH OF TROOPS IN THE FIELD. Being the results of a Commission to inspect the Sanitary Arrangements of the French Army, and incidentally of other armies in the Crimean War. By L. BANDENS, Inspector and Member of the Council of Health, of the French Armies, formerly Surgeon-in-Chief, and first Professor of the Perfecting School of Val de Grace, &c., &c.

Translated and Annotated by FRANKLIN B. HOUGH, M.D., late an Inspector of the U. S. Sanitary Commission. BAILLIERE BROTHERS, 440 Broadway, New York.

This is a neatly published volume of 260 small sized octavo

pages; and decidedly one of the most useful books that has been thus far called into existence by our present war.

It contains, in a concise and readable form, the results of sanitary measures, both good and bad, adopted by the French and English armies during the Crimean War. It should be carefully read by all who are intending to enter the medical department of our army.

THE DOMAIN OF MEDICAL POLICE. (Abstract of a Paper read before the New York Sanitary Association, Feb. 6, 1862.) By LOUIS ELSEBERG, M.A., M.D.

This is a well written pamphlet of 16 pages, in which the writer sets forth the objects and advantages of a judicious Medical Police, for ferreting out and removing the causes of disease. We have room only, for the following paragraph in relation to *Quarantine*, viz.:—

“In the protection of localities, it is believed that the most desirable quarantine is a *dirt quarantine*. ‘Annihilate or exclude *dirt*, i.e., putrefiable animal and vegetable detritus, and no *migratory* or *malignant* morbid poison can sustain its existence even if its cause be imported to the spot!’ Thus it is maintained that, by sanitary reform, ALL MALIGNANT EPIDEMICS ARE PREVENTABLE; and it is interesting to know that this has been proved, even as regards plague, once the most destructive of all pestilences, and looked upon as the very *type* of *contagion*! It has now, so to speak, died out in those cities of the East to which it was formerly a *frequent visitant*, if not an endemic. Long ago it was finally excluded from all the parts of *Western Europe*, not by quarantine, but by improved *local* SANITARY ARRANGEMENTS! Its fountain-head, the great Oriental capital, *Cairo*, before the time of Mehemed Ali, many times lost tens of thousands of inhabitants by its visitations. From here it spread, devastating over Egypt and the world! The viceroy named, and his son, Ibrahim Pacha, (though unaware of the stupendously beneficial results of the undertaking,) removed the hills between Boulaq and the mouth of the Nile, and transformed an immense swamp in the heart of the city, and the *receptacle* of all its filth, into a park, (or olive and fruit-bearing pleasure garden—the ‘*Esbekiah*.’) Other local sanitary arrangements were enforced, and now CARIO (*and with it, all humanity*) IS FREE FROM PLAGUE!

ADVICE TO A MOTHER ON THE MANAGEMENT OF HER OFFSPRING. By PYE HENRY CHEVASSE, M.D. Fellow of the Royal College of Surgeons of England; Author of "Advice to a Wife on the Management of her own Health," etc. Reprinted from the sixth edition, by BAILLIERE BROTHERS, 440 Broadway, New York, 1862.

This is a small volume of 175 pages, very properly addressed to mothers. It is arranged in the form of questions and answers, and the most perfect simplicity of style is preserved throughout.

It embraces almost every topic, that can arise in the physical and mental management of children from birth to puberty. The directions of the author are so plain and judicious, that we commend the work strongly to the attention of parents and all others having the care of children. It might, also, be usefully consulted by many practitioners of medicine.

LONDON LANCET. This old and ever welcome foreign monthly for July, is on our table promptly, as usual; and well filled with interesting matter.

Editorial.

ARMY SURGEONS.—We receive many letters of inquiry in relation to the steps necessary to procure an appointment as surgeon or assistant-surgeon in the regiments of volunteers for the present war. For the information of all our readers, we state that it is necessary, first, to apply to the Governor of this State for permission to go before the Board of Medical Examiners for the State. Second, to pass a satisfactory examination by such Board, whose duty it is to give a certificate designating whether the candidate is recommended as an assistant-surgeon, or surgeon. Having passed the examination of the Board successfully, the candidate is eligible to appointment whenever a vacancy can be found in any of the regiments belonging to this State.

Such appointments will be much facilitated if the candidate

can obtain also, a recommendation from the colonel commanding the regiment in which the vacancy exists.

We are informed that the next regular session of the Medical Board for the examination of candidates, will commence in Springfield, Illinois, on the 4th of August next.

The call for 300,000 more men for the war, makes it necessary to organize a large number of new regiments in this State, with a corresponding number of new places for surgeons and assistants.

The experience of the past year has clearly demonstrated, that *two* medical officers, namely a surgeon and one assistant, are not sufficient for a regiment of volunteers, constantly engaged in active service. The authorities of some of the States, like those of Wisconsin, foresaw the insufficiency of the regular number, and consequently sent a second-assistant-surgeon with each of their regiments. This ought to be done by all the States, certainly with the new regiments now being organized. No policy can be more short-sighted or reprehensible than that of supplying an army with an insufficient number of medical officers, or an insufficient quantity and variety of medical stores.

Will not the Board of Medical Examiners for this State, who have intercourse and influence with the Governor and other military authorities, make a strong effort to have every new regiment from Illinois supplied with at least one surgeon and *two* assistants?

We would also urge all those members of the profession, who intend to seek appointments in the army, to procure and thoroughly read those works relating especially to army hygiene; or the best means of preventing disease. Many of our young physicians commit a great mistake. They connect with army duties only the idea of operative surgery, and hence, in their preparation, are more anxious about the details of anatomy and practical surgery than anything else. Of course, these branches should not be neglected; but all experience has shown that diseases caused by bad cooking, bad camping, bad and uncleanly habits, and bad air from faulty arrangements in camps and hospitals, kill *ten* soldiers for every *one* slain in battle. Let every

medical aspirant for army service study these matters with the utmost care.

CLINICAL CASES IN THE MEDICAL WARDS OF THE MERCY HOSPITAL.

ORGANIC DISEASE OF THE HEART.—ANASARCA, &c.—Mrs. C., a native of Ireland, aged about 40 years, was admitted to the Hospital four days since. The case well illustrates the extent to which disease may effect changes, both in structure and function. Three or four years since she first came under my observation at her own house. She was complaining of irregular action of the heart, difficulty of breathing, scanty urine, and œdematous extremities. Direct examination of the chest by auscultation and percussion, revealed the existence of a rough bellows murmur over the region of the aortic valves, and moderate hypertrophy of the heart.

Under the influence of sedative and diuretic remedies her symptoms were so far relieved that she passed from my care for a time. After a few months all the symptoms returned, but were again relieved by similar treatment. About one year has elapsed since I last saw her until she entered the hospital a few days since. When she was brought here her breathing was short and oppressed, her face pale and bloated, the whole exterior tissues of the body and limbs œdematous, and a large effusion into the cavity of the peritoneum.

The lower extremities were enormously swollen with serous infiltration into the cellular tissues; the skin from the foot to the knee very red and abraded in several places, while the top of the left foot was occupied by an extensive gangrenous slough, partially separated, and underneath filled with "maggots." The burning, sealding pain in the feet and legs was very severe. The case is interesting, as an illustration of the extensive changes that may take place in the blood and tissues from the long continuance of a simple structural lesion primarily limited to the valves of the aorta.

The prognosis was, of course, very unfavorable; there being no hope of doing more than to palliate the more severe symptoms.

For this purpose an effort was made to increase the secretion of the kidneys so as to lessen the watery element of the blood, and thereby diminish the general dropsical effusions. The object being simply to diminish the amount of water without impairing the strength of the patient, or increasing the metamorphosis of tissues, the diuretic chosen was a mixture of nitrous ether, $\mathfrak{z}$ ss, and tincture of digitals, $\mathfrak{z}$ ss; of which a fluid drachm was given every three hours. The lower extremities were placed in a horizontal position and the surface, so far as it was occupied by the erythematic inflammation which occasioned so much burning pain, was covered with an ointment containing 20 grs. of acetate of lead, and 10 grs. of sulph. morphine, to the ounce of simple cerate. The gangrenous portion of the top of the foot was thoroughly washed with a solution of chloride of zinc, 2 grs. to the ounce of water, which speedily destroyed both the offensive smell and the *maggots*, and facilitated the separation of the sloughs.

Under this treatment, aided by a mild but nutritious diet, her most distressing symptoms have been much relieved; but the evident organic changes which have long existed in the valves and muscular structure of the heart, and the consequent altered properties of the solids and fluids throughout the whole system, preclude even the hope of accomplishing more than temporary relief.

SYPHILITIC ECTHYMA.—Mr. B., aged about 28 years; native of Germany, was admitted to the hospital about two months since, with the surface of the nates, perinium, and one groin thickly studded with pustules of ecthyma; and the scrotum covered with an eruption of chronic eczema. These eruptions had existed several months before his admission, during which time he had been subjected to a variety of treatment with but little apparent advantage. The dark red, or coppery hue of the areola around the pustules, together with the fact that he had had primary syphilis a few years previous, rendered it quite certain that the present eruption was influenced by that disease.

The thick, conical scabs had been detached from most of the

sores, making them have the appearance of ill-conditioned ulcers with elevated edges, and very painful.

But the scabs were left unbroken on a sufficient number to render the characteristic features prominent and easily recognized. There was not much general debility, and the digestive organs were in a healthy condition.

Treatment.—He was directed to take *ten* drops of Donovan's solution in sweetened water just before each meal, and at bedtime. To allay the pain and destroy the irritability of the ulcers, they were wet twice a day with an aqueous solution of tannin and opium; and in the interval dressed with an ointment of ammoniated mercury and simple cerate.

It was soon rendered apparent, however, that all applications in the form of ointments only aggravated the cutaneous eruption. They were consequently dispensed with, and the surface kept covered with a cloth, wet in a solution of sulphate of iron. 5 grs. to the ounce of water. A few of the larger ulcers were touched once or twice with the solid nitrate of silver. Under this treatment the eczematous eruption on the scrotum rapidly disappeared, but the improvement in the ecchymous pustules and ulcers was slow. When he had taken the Donovan's solution about two weeks, his gums and breath began to exhibit all the characteristic symptoms of mercurial action. Its use was then restricted to one dose of ten drops every night; but in a few days the mouth became so sore and the breath so offensive, that it was omitted altogether, and the following substituted in its place, viz.:—

R.	Fluid Ext. of Conium,	5jss.
	Fluid Ext. of Stillingia,	5jss.
	Iodide of Potassa,	5jj.

Mix, and take a teaspoonful before each meal and at bedtime.

Under this treatment, with a continuance of the local application of the solution of sulphate of iron, the ulcers and pustules began to cicatrize more rapidly, and are now, ten weeks after admission into the Hospital, quite well.

Many have supposed that the internal use of Donovan's solution would not produce mercurial salivation. But it certainly

produced that effect in the present case, after having been used only about two weeks. Whether the patient was *peculiarly* susceptible to the influence of mercurials generally, I do not know.

CHRONIC DIARRHŒA.—RUBEOLA, &c.—A. B., an orphan boy, aged about 10 years, was presented to the Clinical class, July 21st, 1862. He was slender, thin in flesh, face and lips pale, skin cool, tongue clean, pulse moderately accelerated, soft, and small. His bowels were loose, having had, during the last four or five days, from three to six thin, brown, or greyish-brown stools per day, with loss of appetite and strength, but without much pain. Several of the lymphatic glands, behind the angle of the jaw, and along the margin of the sterno-cleido-mastoid muscle, were enlarged and slightly tender to the touch.

The patient had passed through a regular ordinary attack of rubeola or measles, commencing about two weeks previous.

There was nothing in the appearance of the present patient to mark it as one of any interest or importance; and yet the class were reminded that it was a good sample of a class of cases, of not unfrequent occurrence, and which by neglect or bad treatment sometimes lead to pathological changes of the most serious nature. Diarrhœa, depending on a low grade of irritation of the mucous membrane of the ileum and colon, is a common occurrence during the decline of the eruptive stage and the early convalescence of measles and scarlet-fever. In most cases this diarrhœa continues only a few days, and ceases spontaneously without attracting any attention; but if the patient is naturally delicate in organization, or hereditarily predisposed to scrofula, the irritation of the mucous membrane becomes more persistent.

The mesenteric glands connected with the effected portion of mucous membrane soon partake of the same grade of excitement, leading to increased vascularity and tumefaction of those glands. This increased vascularity is soon followed by the deposit of matter either plastic or caseoplastic (serofulous), and permanent enlargement.

This state of the glands interferes with the further absorption

and assimilation of chyle, consequently the fœcal evacuations remain unhealthy, emaciation steadily progresses, and in from three to six months all the phenomena of marasmus or tabes mesenterica, are fully developed.

In persons more nearly the age of puberty, an attack of measles is often followed by the same grade of irritation in the mucous membrane of the respiratory passages, perpetuating a troublesome cough, and the slow formation of deposits, either scrofulous or tuberculous, in the bronchial glands and sometimes in the tissue of the lungs. Ultimately the patient presents all the symptoms and results of ordinary consumption. Such are the very serious consequences which often result from the neglect of that simple and apparently mild grade of irritation in the mucous membranes and glands presented by the patient before us.

Hence it is a matter of much practical importance, to understand the nature and tendencies of these cases early, that appropriate treatment may be resorted to before the more serious pathological changes have taken place.

In selecting remedies for the treatment of the child before us, it is necessary to keep the objects to be accomplished clearly in the mind. These objects are: 1st, to allay the irritability or morbid sensitiveness of the mucous surfaces, both pulmonary and intestinal; 2nd, to increase the general tone of the capillaries and maintain a free action in those organs through which effete matter is rejected from the system, especially the kidneys; 3d, to diminish the frequency of the intestinal discharges.

The first and last of these objects may be accomplished by almost any combination of anodyne and astringent remedies, such as an opiate with acetate of lead, tanin, kino, or any other pure astringent.

Every observing practitioner has learned that these combinations not only allay the irritation of the mucous membranes, and lessen the discharges from the bowels, but they are liable to diminish, also, secretory action generally, and thereby lessen the elimination of urine and other effete matter to an injurious extent. Hence we prefer to combine the opiate necessary for

allaying the irritation with such agents as will improve the general tone of the capillaries and increase secretion, especially from the kidneys. Either of the following formulæ will meet the indications perfectly:—

R.	Ol. Terebinth.....	5j.
	Tinet. Opii.....	5j.
	Pulv. G. Acaccia.....	5j.
	Sacchar. Alba.....	5j.

Rub together and add

Mint Water.....	5j.
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Mix, and give to the patient before us half a fluid drachm three times a day.

Or, R.	Aromat. Sulph. Acid.....	5j.
	Sulph. Magnesia.....	5j.
	Tinet. Opii.....	5j.
	Water.....	5j.

Mix. Dose the same as the preceding.

Or, R.	Erigeron (Fleabane).....	5j.
	Tannate of Quinine.....	20 grs.
	Sulph. Morph.....	1 gr.

Mix, make an infusion in a pint of boiling water. When cold, give from one to two fluid drachms every three, four, or six hours according to the frequency of the discharges. These combinations are not only applicable to the treatment of such cases as the one under consideration, but we have used them for a number of years, with great satisfaction, in the treatment of the second stage of cholera morbus, cholera infantum, and the common summer complaints of children.

MEDICAL DEPARTMENT OF LIND UNIVERSITY.—The fourth annual announcement of this institution has been laid on our table. The changes which have occurred in the faculty were duly noticed in a previous number of the EXAMINER. The announcement affords evidence of a very gratifying degree of prosperity on the part of this department of the university. The next regular annual lecture term commences on the second Monday in October and closes on the first Monday in March following.

There is now present an excellent class of students attending the clinics and examinations of the summer course, and the prospects for the coming term are good.

TWO ASSISTANT-SURGEONS.—Since the first editorial article was written, we notice with much pleasure that our State authorities have directed *two* assistant-surgeons for each Illinois regiment.

SELF-APPLYING SPONGE PESSARY.

To the Editor of the LANCET:—

SIR:—Though old, I am not dead yet; and, in relinquishing the practice of my profession, which I have exercised for the space of forty-four years in the metropolis—*nec ignotus, nec ignorus*—I wish to leave in your pages another record of my devotion to that branch especially which has reference to maladies afflicting the other sex.

Under the name of “Self-applying Sponge Pessary,” I desire to make known a very simple contrivance by which uterine prolapsus (unless of a very aggravated form) can be effectually supported with the greatest ease, without the manual interference of a medical attendant.

Sponge pessaries have ever been in favor with the patients themselves, for many obvious reasons: amongst others, their pliability—the complete manner in which they apply themselves to the vagina imparting a feeling of support, and further, the facility they afford of preserving cleanliness by means of injections with the improved female syringe. But if the sponge is of a large size, it is not readily inserted by the ordinary process. Now the object of my contrivance is to facilitate the latter operation by the patient herself.

That contrivance consists, first, of a conveying tube, four inches and a-half in length; and, secondly, of a slender stem, intended to bear the sponge. Both are made of the finest and lightest turned ivory, having a high polish. The diameter of the tube is one inch (or one inch and a-half if a larger sponge be required) at the upper end; and one inch, half an inch, or three-quarters of an inch, as may be, at the lower end. Here there are two semi-oval pieces on the ivory walls cut out, opposite one another, an inch high; the remaining edges of this end of the tube being slightly turned outwards, so as to afford a hold for the fingers for pulling the tube out. The tube so con-

strueted not inaptly reminds one of Reeamier's speculum, and might, on occasion, be employed as such, as I have done.

A sponge of the finest texture, and oval, about the size of a pullet's egg (when dry), is firmly sewn on a round and slender ivory washer, half an inch in diameter, perforated with holes for the needle to pass through, and having moreover a female screw in the centre, into which the ivory stem is screwed when the instrument is to be introduced. This arrangement allows the same stem being employed with two, three, or more sponges similarly secured on their respective ivory washers, whereby great facility is afforded of changing the pessary daily or more frequently, for the sake of cleanliness and comfort. The sponge and the stem thus combined constitute the pessary, the introduction of which by the patient herself is effected in the following manner:—

The stem, bearing the sponge, being introduced by its free end into the upper or narrower part of the tube, is gradually pushed down towards the wider or lower end until the sponge itself disappears almost entirely, leaving only a very small, round segment visible. By moistening the sponge and compressing it, this manœuvre becomes easy of accomplishment. The patient next separates the labia with her left hand, and introduces with the other the instrument by its smaller end into the vagina, either in a standing or sitting posture, pushing it first somewhat backward and then upwards, until the everted edges touch the labia. In this position she applies one or two fingers to the small, round knob which terminates the stem, and holds it firm in its position; while with the fingers of the right hand she withdraws, by means of the everted edges, the tube from the vagina—an operation greatly facilitated by the presence of the two semi-oval cuts. The pessary will now remain in its place without wobbling or falling; but it may further be secured, if so desired (though there is little occasion for it,) by passing a staylace through a hole made for that purpose in the small end knob of the stem, and fastening the same to a belt or a napkin.

To withdraw the instrument the patient, standing and bending forward, has only to pull the stem by the knob with the staylace, or even without it, at first straight downwards, and next by bringing the stem more towards the abdomen. In every case in which I recommended such a contrivance among patients capable, from their position in society, to appreciate the boon, the result has been most successful. The feeling of confidence and support experienced by the patient has been universally

acknowledged. Mr. Weiss, instrument-maker, to whom I made over one of the instruments manufactured under my direction for the information of the profession, has kindly undertaken to have others made after the pattern, and keep them ready for use.

I remain, Sir, your obedient servant,

A. B. GRANVILLE, M.D., F.R.S.

Curzon-street, May-fair, July, 1862.

THE TREATMENT OF ANEURISM.

To the Editor of the *LANCET*:—

SIR:—Since much important information relative to the treatment of aneurism has appeared in the *Lancet*, may I make so bold as to request you, should you think it worthy a place in your journal, to insert the following suggestion relative to the treatment of aneurism—a suggestion which I trust may lead in many cases to the abandonment of ligature, and fill up the gap which appears to me to exist between the simpler forms of treatment, such as by pressure and forcible flexion, and the extreme one by ligature—viz.: to cut down upon the artery, and to so far separate its coats from the surrounding structures as to enable the operator to control the circulation through the vessel by a small pair of compress forceps, electro-plated, with a good firm spring, and slightly roughened on their approximate surfaces so as to prevent them slipping from the vessel. By this means the circulation might be as effectually stopped as by the ligature, and the necessity of separating the vein from the artery (which in cases of the femoral artery is the chief obstacle to the operation) done away with. The forceps should be left in the wound, and secured by plaster, till the cure is effected. I do not think any more serious consequences would follow such a proceeding than would follow the ligature, and it would have the advantages—1st, facility in the operation; 2ndly, avoid the separation of the vein; 3rdly, the forceps could be removed at any moment, should it be found necessary to do so. In those cases of internal piles, where their removal by the knife is prevented by the fear of subsequent hemorrhage, I am of opinion that the compress forceps applied to the base of the pile might be used instead of the ligature to restrain the bleeding, and could be removed after ten, twelve, or more hours after the operation, without any fear of bad results.

I am very glad to see in one of your late numbers a proposal for the removal of embolon. Perhaps I may be allowed to state that I have held the opinion that a fine suture might be applied

to the coats of both arteries and large veins in cases of accidental wounding during operation, or from other accidental causes, such as puncture by penknife, etc. We cannot possibly know how an operation may succeed until it is tried. Should a case of aneurism come under my notice, and the simpler methods fail to afford a cure, I shall attempt its cure by the compress forceps.

Hoping that I have not suggested an impracticable operation, and with the desire to supply a link in the chain of operations for aneurism.

I am Sir, your obedient servant,

AUGUSTUS BROWN, M.R.C.S.

Minerva-terrace, Barnsbury-park, Islington, June, 1862.

THE POISON OF THE ADDER.—Dr. Edwin Bishop, of Moreton Hampstead, Devon, in a letter to *The Times*, makes the following suggestion:—

“The remedy for the bite of an adder, and indeed all poisonous snakes, is simple. It has been proved by experiment, over and over again, that poisons of this character are harmless when applied to a mucous service, and quantities have been swallowed without producing any ill-effect. The bite, nine times out of ten, is in some part of the hand, and immediately it is felt the wounded part should be well sucked by the mouth, and a piece of string tied tight round the finger or the wrist (according to the seat of the bite) to prevent the poison from being absorbed into the system. If this simple plan was generally known and acted upon, death or injury from the bite of an adder would be rare indeed.”

In cases of dissecting wounds, and of hydrophobia, this plan might also be adopted, and in many instances would prevent the poison entering the system.

ACETATE OF POTASH IN GONORRHŒA.—Dr. Betoldi states in the May number of the *Annali di Medicina*, that he has had much success with this salt in gonorrhœa, given in doses of about one drachm a day. The author seems to look upon this medication as novel, and is probably not aware that acetate of potash has for some time been given in this country in cases of gonorrhœa, with variable results.

A HUMAN SALAMANDER.—A curious exhibition takes place every evening at the corner of the Rue Ville Just and the Avenue de St. Cloud, Paris. In a small field there situated a wooden house, covered with pitch and other combustible matters, is

erected daily, and set fire to at about eight o'clock each evening. A man jumps into the midst and pulls down blazing rafters, which he carries away. This salamander can stay in the fire from five to seven minutes. His clothes are said to be made of asbestos, covered with sponges freely imbued with some chemical preparation.

OPHTHALMIA.—The new species of ophthalmia which startled the French physicians a few weeks ago in the garrison of Vincennes, is more extensively spread than was at first supposed. The soldiers whose optic nerves become paralysed the moment the sun goes down are not to be found in that locality alone. The disease has appeared with great virulence at Strasburg and other places, and has much embarrassed the faculty. Perfect vision returns in the morning, but at sunset the patients again lose their sight. The most searching investigation is being made as to its cause and cure.

THE HAIRLESS MEN OF AUSTRALIA.—Their exists beyond the Balonne River, Western Australia, a race of men entirely destitute of hair on any part of their bodies. They appear to be of Mongolian or Chinese origin.

TEST FOR POISONOUS PAPER-HANGINGS.—Common spirits of hartshorn or ammonia is a very sure and easy test for arsenic. On application, the beautiful but dangerous green turns to a decided blue.

L'Union Medicale gives the following catalogue of diseases under which the Grand Monarch, Louis XIV., suffered at various times of his life. The facts are obtained from observations made by his physicians, Vallot, D'Aquin, and Fagon. The king appears to have had his share of human bodily infirmities. "At seventeen, he caught a violent blennorrhœa. Some time afterwards, he narrowly escaped falling a victim to confluent small-pox. He next suffered from a scirrhus induration of the breast. At Calais he caught a putrid fever; and afterwards had the measles, dysentery, odontalgia, arthritis, abscess in the left armpit, and fistula in ano. Besides this, Louis XIV. had an anthrax in the neck. Moreover, all the teeth in his upper jaw were extracted, in consequence of a fistulous opening in this bone, which made a communication between the mouth and the nose, so that liquids escaped by the nose, the royal nasal mucosities giving off a cadaverous odor. Lastly, he is represented as having been bled forty-four times, as having had fifty lavements, and swallowed two hundred and eleven purgatives. Gouty, podagrous, and afflicted with gravel during many years,

this lofty individual at last perished of gangrena senilis."—*Brit. Med. Journal*.

BRIGADE-SURGEON ADAM HAMMER is ordered to report to the Medical Director at St. Louis for duty in charge of one of the general hospitals in that city.

Assistant-Surgeon Harrison Allen, Medical Cadet F. G. H. Bradford, and Hospital Stewards McManus and Austen will report in person to Surgeon Letterman, Medical Director of the Army of the Potomac, for duty.

Surgeon Mitchell, 1st Maryland Volunteers, will report for duty to Surgeon McVarlin, Medical Director of Gen. Pope's command.

Surgeon Parker, U. S. Army, will repair to Chicago to relieve Brigade-Surgeon Blaney, in his duties as Medical Purveyor, the latter to report to the Surgeon-General.

Surgeon William Whela, to be Chief of the Bureau of Medicine and Surgery.

Theodor Woolverton, of New York, to be Assistant-Surgeon in the Navy.

J. H. Boucher, of Iowa, to be Brigade-Surgeon of Volunteers.

The following were confirmed as Assistant-Surgeons in the United States Army:—Wm. H. Keene, of Pennsylvania, Geo. L. Porter, of Pennsylvania, David S. Huntington, of Pennsylvania, T. W. Williams, District of Columbia, Charles M. Colton, of Virginia, T. M. Brown, of Ohio, Charles S. Degraw, of New York, Edward C. Strode, of Illinois, Andrew H. Smith, of New York, and Van Buren Hubbard, of Ohio.

Brigade-Surgeon Lecompte has been ordered to repair to Chester, Penn., to take charge of the general hospital at that place.

Brigade-Surgeon C. L. Allen is ordered to report to the Surgeon-General as a member of the Board for the Examination of Surgeons of Volunteers.

Brigade-Surgeon A. B. Crosby, late Medical Director Peck's Division, one of the most talented and energetic medical officers in the army, has resigned, and will return home immediately. Ira Perry, Contract-Surgeon, has been assigned to the 2d R. I., as Act.-Asst.-Surgeon. J. G. Strowbridge to the 39th Ill.; J. W. Hinchley to the 13th Ind. Drs. Sargent, M'Collister, and Pierce to the batteries under command of Major West.

Brigade-Surgeon D. H. Prince and Surgeon H. Jewitt, of the 10th Mass., remained with the wounded after the battle of Malvern, are still in the hands of the enemy. Surgeon M. S. Killenger of the 100th N. Y. remained with his wounded on the Chickahomony, and is a prisoner.—*Am. Med. Times*.

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	U.S.P.		U.S.P.
Aloes and Myrrh.....	4 grains.	Cynoglosse	1 grain.
Compound Cathartic.....	3 "	Quevenne's Iron, reduced by Hy-	
" "	1½ "	drogen.....	1 "
Aloetic.....	4 "	Proto-Iodide of Iron.....	1 "
Assafetida.....	4 "	Lactate of Iron.....	1 "
Aloes and Assafetida.....	4 "	Sulphate of Quinine.....	1 and 2 "
Dinner, Lady Webster's.....	3 "	Valerianate of Quinine.....	1 "
Comp. Calomel, Plummer's.....	3 "	" Zinc.....	1 "
Blue Pills.....	3 "	" Iron.....	1 "
Opium Pills.....	1 "	Citrate of Iron and Quinine.....	2 "
Calomel Pills.....	2 "	" Iron.....	2 "
Opium et acet. Plumb. each.....	1 "	Willow Charcoal.....	2 "
Extract of Rhatany.....	2 "	Diascordium.....	2 "
Compound Rhubarb.....	3 "	Anderson's Anti-bilious and Purga-	
Compound Colocynth.....	3 "	tive.....	2 "
Compound Squills.....	4 "	Extract of Genitan.....	2 "
Dover Powders.....	3 "	Iodide of Potassium.....	2 "
Carbonate Iron, Vallet's formula....		Calcined Magnesia.....	2 "
Carbonate of Manganese and Iron.....		Rhubarb.....	2 "
Kermes.....	1-5 "	Ergot, powder covered with sugar	
Santonie.....	½ "	as soon as pulverized.....	2 "
Bi-Carbonate of Soda.....	4 "	Phellandria Seed.....	2 "
Magnesia and Rhubarb, each.....	1 "	Washed Sulphur.....	2 "
Meglin.....	1 "	Sub-Nitrate of Bismuth.....	2 "
		Tartrate of Potassa and Iron.....	2 "

GRANULES.

Of 1-50 of a grain each.

Aconitine,	Arsenious Acid,	Atropine.	Digitaline,
Morphine,	Strychnine,	Valerianate of Atropine,	Valtrateine.

Of 1-5 of a grain each.

Tartar Emetic,	Codeine,	Conicine,
Extract of Belladonna,	Extract of Hyoscamus,	Extract of Ipecac,
" Opium,	Proto-Iodide of Mercury.	
Lupuline.....	½ grain.	Extract Rad. Aconite..... ¼ grain.
Extract Nux Vomica.....	½ "	Emetine..... ¼ "
Veratrine.....	1-24 "	Iodide of Mercury..... ¼ "
Sulphate of Morphine.....	½ "	Valerianate Morphine..... ¼ "
Corrosive Sublimate.....	1-12 "	Acetate Morphine..... ¼ "
Nitrate of Silver.....	¼ "	Digitaline..... 1-24 "
Extract of Hyoscamus.....	½ "	Strychnine..... 1-12 "
Colchicum (each granule equal to two drops of tincture.)		

Colchicum (each granule equal to two drops of tincture.)

DRAGEES.

Copaiba, pure solidified,	Copaiba and Cubebs,	Copabia, Cubebs and Citrate Iron,
Cubebs, pure,	Cubebs and Alum,	Cubebs, Rhatauy and Iron.

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THE
CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XXIV.

CLINICAL REMARKS ON THE BOWEL-AFFECTIONS
OF CHILDREN IN THE MEDICAL WARDS OF
THE MERCY HOSPITAL.

By N. S. DAVIS, M.D., Professor of Clinical Medicine, &c.

GENTLEMEN:—It is only a few days since, that I directed your attention to a case of diarrhœa, occurring as a sequel of rubeola. The frequent occurrence of that disease during the months of July and August, especially in all the more populous cities of our country, and its fatality among young children, renders no apology necessary for calling your attention to it again, in connection with the several little children before you. You see in all of them a striking similarity of physiognomy or external appearance of disease. There is the same sober, melancholy expression of countenance; the same pale, thin lips, sunken eyes, and blanched skin; the same small weak pulse, and general emaciation, in each. You see their limbs attenuated, the muscles soft and flabby, and the skin hanging in dusky wrinkles on the neck. I am informed that they have had diarrhœa about two weeks; the discharges being thin, like green or yellowish water, and occurring as often as six or eight times in the twenty-four hours, with vomiting occasionally after drink-

ing freely. Their skin over the trunk of the body, and especially over the abdomen, is warmer and dryer than natural, while the extremities are cool. A spell of restlessness and crying or moaning a few minutes before a passage from the bowels indicates the existence of abdominal pains or gripings, though in many cases these are almost entirely absent. They have little or no appetite for anything but water, although the thirst is, in some cases, so great that they drink almost any bland liquid greedily.

The cases of irritation of the mucous membrane of the alimentary canal, or the *summer complaints of children*, as met with in general practice, may be arranged into three groups. The first group embraces those cases in which the patient is suddenly attacked with copious vomiting and purging of serous fluid, sometimes tinged with bile, and sometimes hardly staining the napkin.

Under the depleting influence of these evacuations the countenance becomes pale and contracted, the eyes sunken, the pulse small and frequent, the extremities cold and shrunken, the urine scanty or entirely suppressed, and the mind lethargic, with spells of great restlessness. In the more severe attacks, these effects follow so rapidly that collapse and death are reached in from six to twenty-four hours.

In most cases, however, after the first eight or ten hours, the discharges become less frequent and copious, the vomiting occurring only when drink is taken, and the passages from the bowels being less both in quantity and frequency.

Still very little nourishment is retained by the stomach, and the greater part of that little is hurried through the intestines without change. Consequently the little patient continues rapidly to emaciate and, unless counteracted by appropriate treatment, will usually reach the stage of fatal exhaustion in from one to three weeks. In the advanced stage of some of these cases, in addition to all the ordinary symptoms of exhaustion, there occurs constant vigilance or wakefulness, with rolling of the head, tossing of the hands, and sometimes moaning. These symptoms induce the parents and nurses to think the

disease "has gone to the head." And I have known several cases of this kind in which the attending physician had been applying cold applications to the head, blisters behind the ears, and, in two cases, even leeches and a calomel purge, under the impression that the symptoms indicated the supervention of inflammatory action in the brain or its membranes. I need not remind you that in the cases alluded to, such opinions and practice are entirely erroneous; and that the symptoms described are the result, not of inflammatory action in the brain, but of a true anemic condition of that organ. It is well known that very excessive losses of blood will often produce the most distressing feelings in the head, accompanied by morbid vigilance or wakefulness, and sometimes slight delirium. This anemic condition of the brain, whether from hemorrhage or from exhausting serous discharges, may be distinguished from inflammation and active congestion, by close attention to the pupil of the eye, the corotid arteries, and the anterior fontanelle, if this still remains open. It is well known that cerebral inflammation produces contraction of the pupils, fulness and hardness of the corotids, and fulness of the fontanelle. It is not until the inflammation has terminated in effusion sufficient to produce compression, that the pupils become dilated. But the same amount of effusion that would dilate the pupils, would produce also stupor or coma, and still greater fulness of the fontanelle. Whereas in anemia of the brain, the dilated pupil and staring expression is accompanied by restless sleeplessness instead of coma, by softness of the corotids, and by a sunken or depressed fontanelle. Many of the cases included in what we have called the first group, after presenting the active symptoms of cholera morbus for the first few days, undergo a different change. The vomiting ceases, the discharges from the bowels remain frequent, but become small in quantity, and composed chiefly of mucus, often streaked with blood. Simultaneous with this change in the discharges, more or less febrile reaction comes on, causing the skin to become dry and warm, especially over the abdomen and trunk of the body; the pulse more full and quick, and indications of more frequent and severe pains in the ab-

domen. In a word, the symptoms become indicative of ileocolitis or dysentery.

The second group of cases embraces all those (and they make a majority of all the bowel-affections of children during the hot months of summer), which commence with simple, thin, or serous evacuations from the bowels, without the intermixture of either blood or mucus, and without accompanying fever. The evacuations in the several cases constituting this group vary much in their color, consistence, and frequency. In some cases they are from the beginning so thin and colorless as to leave no more stain or residue on the linen than turbid water; and so large in quantity as to prostrate the patients very rapidly; causing the skin to become blanched and cool, the eyes sunken, the pulse small and weak, with all the indications of approaching collapse. In many instances the discharges of this character, after continuing long enough to induce a decided deficiency in the watery and saline constituents of the blood, and considerable prostration, become smaller in quantity, less frequent, and mixed with a little mucus. At the same time a moderate febrile reaction takes place, causing the child to become more fretful and the abdomen more hot. The color of the intestinal discharges varies much, being sometimes green, at others yellow, and again white. They vary much also in consistence and odor; being sometimes thin as water and almost as odorless, and at others only semi-fluid, frothy, and extremely offensive.

If the fœces are closely examined they will generally be found to contain more or less of the food or drink taken, which has passed through the alimentary canal with little or no change, and also numerous epithelial cells from the surface of the mucous membrane. The urine is generally scanty in proportion to the copiousness of the intestinal discharges. If the progress of the disease is not arrested by appropriate treatment, the patient continues steadily to lose flesh and strength, until the emaciation is as extreme as in the last stage of pulmonary tuberculosis, and the little sufferer sinks quietly into the arms of death, from simple exhaustion. In some cases, however, after the disease has continued three or four weeks, the patients

partially recover. That is, the stomach and upper part of the alimentary canal appear to recover their functions; the child takes nourishment well, retains it, and regains a degree of cheerfulness. The discharges from the bowels, however, continue more frequent than natural, varying from two to six or eight times in the twenty-four hours. They are usually semi-fluid, of a light yellow or greyish color, often frothy, and always more or less offensive. They often contain curds of milk and other undigested particles of food. The urine is generally less in quantity than natural, and contains such an excess of phosphates and lithates as to give it a whitish or milky appearance soon after being voided. In this state the patient usually recovers a good appetite, often indeed, a morbid craving for food. But so large a part of what is taken, is either hurried through the bowels or only partially assimilated, that the emaciation continues and sometimes slowly increases. The abdomen becomes gradually more and more tumid, until after a few months it is greatly distended, presenting a strong contrast to the emaciated extremities. The distended abdomen is generally tympanitic, indicating a simple accumulation of gases, though sometimes hard tumors may be felt through the walls of the abdomen, consisting of enlarged mesenteric glands.

When disease assumes this form, it generally takes the name of *tabes-mesenterica* or *marasmus*, and may continue one or two years before ending in death or recovery.

The third class or group of cases of bowel-affections occurring in young children, during the summer months, are distinguished from the two preceding classes, by the presence of distinct febrile action at the commencement of the attack. With the first onset of vomiting, or purging, or both, the skin is found hot and dry; the lips parched; the pulse more firm and frequent; and the patient more fretful, and exhibiting more signs of pain. If vomiting exists in these cases, it is generally more a frequent writhing or straining to vomit, with only a slight discharge of thin mucus, sometimes colorless but often tinged yellow or green with bile. Of course, whatever food or drink is taken is promptly rejected.

The intestinal evacuations are generally frequent, accompanied by signs of pain, and almost always affording traces of mucus. When the disease is limited chiefly to the ileum and upper part of the colon, the discharge is mostly a thin serous fluid, tinged green or yellow and presenting only traces of mucus. When the lower part of the colon and rectum are the chief seat of disease, evacuations are almost wholly mucus, more or less streaked with blood, and accompanied by tenesmus and straining. Emaciation progresses rapidly, and there is more restlessness, accompanied by a fretful, peevish temper, than in the other class of cases.

Causes.—If you credit the statements of mothers and nurses, you will have no difficulty in determining the efficient cause of all these intestinal-affections of summer. In nineteen cases out of twenty, they will tell you, with the utmost confidence, that it is “the teeth;” meaning thereby, that the growth of the teeth causing them to press on the gums, is the direct cause of the irritation of the mucous membrane of the alimentary canal. And in the twentieth case, they will be equally confident that *worms* are the cause of all the mischief. So confidently and universally are these notions entertained, that hundreds of mothers, especially of the poorer classes, wholly neglect to seek medical aid for their little ones when attacked with diarrhœa, until it has run on two, three, or even four weeks, and they are reduced to skeletons, with the skin hanging in folds on their emaciated limbs and necks, and they are in a hopeless state of exhaustion.

If you ask the mother why she neglected the child so long, her ready and uniform reply is: “Oh! it was teething.” And so she has been looking every day for some one or more of the teeth to come through the gums, to afford relief; and by way of doing *something*, she has very likely given one or more doses of castor oil or vermifuge.

This, however, strictly in accordance with the homœopathic principle, “*similia similibus curantur*,” is nevertheless only calculated to hurry the patient a little faster towards the grave. If you suggest a doubt as to the part the teeth play in causing

the disease, you will be assured that the gums are "swollen," and that the child is constantly "biting the fingers, or nipple, or whatever else is put into its mouth," and this, in their estimation, is abundant proof that the teeth cause all the difficulty. Now, gentlemen, I call your attention particularly to this subject of teething, because the observation of many years has satisfied me, that the popular errors in relation to it, cause the needless sacrifice of thousands of infants annually.

Not only the mother and the nurse, make it an excuse for neglecting to seek judicious medical advice, in the first and most curable stage of the diseases of infancy, but many physicians are in the habit of directly encouraging this neglect, by telling those who bring their children for advice, with the milder forms of diarrhœa, "that they are *teething*, and it cannot be expected that they will be very well until that process is completed." But is it true, that the natural growth of the teeth and their exit from the gums, is a cause of disease? I think not. First, because it is a strictly physiological process, as much so, as the growth of the hair or nails. Second, because the gum is a structure neither endowed with a high degree of sensibility, nor supplied with nerves of extensive sympathetic relations. Third, because the constant disposition of the child to put everything in its mouth, and bite freely with its gums, proves them to be neither tender nor sensitive, and without these there can be no irritation.

That the growth of the teeth is not the cause of cholera infantum and the diarrhœas of summer, will be fully evident to you from the following well established facts:—

The teeth of children are growing at all seasons of the year, in January as much as in July; and hence, whatever diseases arise therefrom, would be liable to occur as much at one season as another. But the diseases under consideration are restricted in their prevalence almost entirely to the hottest part of the year. This, in our latitude, is embraced in the months of July, August, and September. So true is this, that the number of deaths from these diseases alone, gives to the months named, an average annual mortality more than double that of any other

months in the year. And yet, notwithstanding these obvious and universally admitted facts, we daily hear mothers, nurses, and doctors talking of "teething" as the common and efficient cause of the intestinal complaints of summer.

Again, you will often hear it alleged that the eating of unripe and spoiled fruit and vegetables, is the principal cause of intestinal summer complaints. The fallacy of this is sufficiently shown by the fact, that a majority of the children attacked, are so young that they have not eaten fruit or vegetables of any kind.

The real causes of the summer complaints of children, both predisposing and exciting, will be easily inferred from a careful study of the localities, the season of the year, and the special circumstances under which they occur. They occur much more severely in densely populated cities than in rural districts. They are particularly prevalent in all those cities and populous towns of our country occupying that climatic belt or zone characterized by the greatest contrast of the seasons, that is, the greatest difference between the coldest days of winter and the hottest days of summer. This belt or zone, so far as regards that part of the United States east of the Rocky Mountains, is included between the parallels of 31° and 42° north latitude. In a large part of this territory the difference in temperature between the coldest days of winter and the hottest of summer, is, from 75° to 140° of Fahrenheit.

It can hardly be doubted, but this extreme annual variation of temperature operates as a predisposing cause of intestinal fluxes during the warm part of the year. This predisposition is also increased by habitual dampness of the atmosphere, by the various impurities that exist in the air of large cities, and by that morbid material or agent usually called malaria. Age, too, exerts an important predisposing influence; the attacks being far more numerous in infancy and early childhood, than at any subsequent period of life.

There are satisfactory anatomical reasons for this. The mucous membrane of the digestive organs at birth, is extremely delicate, and both the epithelial layer and the numerous gland-

ular structures belonging to it, are imperfectly developed ; so much so as to be fitted for contact with only the most simple fluids, such as good milk. These structures do not complete the development and acquire the compactness and diminished sensitiveness of complete or mature organization until the child is at least three years old.

But the period during which the most rapid development takes place, and during which there is consequently the greatest susceptibility to morbid impressions, is the first two years of life.

The teeth being a part of the digestive apparatus, their growth and protrusion through the gums, constituting what is familiarly called "teething," takes place during this same two years, and simply affords a visible index of the rapid development of the mucous membrane, and all other parts of that apparatus, by which it acquires that diminished sensibility, that increased compactness of structure, and its glandular appendages that secretory power, which enables it, not only to receive and digest a greater variety of food, but also, to withstand a greater variety and intensity of morbid impressions without inducing disease. Remember then, gentlemen, that the growth of the teeth is only a *coincident* of corresponding growth or development in the whole digestive canal ; and to attribute the important diseases of the mucous membrane of that canal, during the first two years of life, to such growth of the teeth, is as absurd as it would be to attribute them to the *coincident* growth of the hair on the child's head, or the nails on its fingers.

While we attribute to the extremes of the seasons, confinement in the nursery, dampness of the atmosphere, malarious and other impurities, a predisposing influence ; I am fully satisfied that the immediate exciting or efficient cause, is a high atmospheric temperature.

During thirteen years residence in this city, I have annually noted the commencement of the prevalence of diarrhœas and cholera affections among the children, and have uniformly found such commencement to be coincident with the first week of continuous hot summer weather. One or two hot days at a

time is not sufficient; but when the heat is continuous for five or six in succession, it has been invariably accompanied and followed by more or less prevalence of diarrhœa and cholera infantum. This first week of hot weather in this locality, varies in the time of its occurrence in different years, but may be confidently looked for between the twentieth of June and the fifteenth of July. From that time to the end of July new attacks continue to multiply with rapidity. During the month of August new attacks are much less frequent, but a large proportion of the milder cases commencing in July, are not brought to the notice of the physician until August. So to, a very large proportion of the fatal cases that commence during the last half of July do not reach the fatal termination until in August. Hence, the month of August uniformly shows much the highest ratio of mortality, and is of course regarded by the people as the most sickly month of the year. But a careful observation and record in relation to the time of attack, will show that three-fourths of all the cases of simple diarrhœa or summer complaint, cholera infantum, and cholera morbus, date their commencement during the first three weeks of hot weather, which is almost uniformly in July. To understand the *modus operandi* of caloric, or a high temperature in producing disease, we must have a clear conception of the normal properties of living, organized matter, and the manner in which those properties may be modified by exterior agents. A careful analysis of the phenomena connected with organization and life, shows that every organized living structure, whether vegetable or animal, is possessed of two properties elementary and essential to the existence of matter in an organized and living state. The first, is an affinity by which the organic atoms are made to assume a definite arrangement, constituting the primary structures and types of organization. This property for convenience we call *vital affinity*.

The second, is a susceptibility to impressions from exterior influences, or a capability of being acted upon. This susceptibility must not be confounded with nervous *sensibility*, which is merely one of the functions of nerve structure, and not an

elementary property of organized matter. The two elementary properties here alluded to, will be most clearly appreciated by reference to the simpler types of organization, such as the germinal cells of the ovarium, the egg, or the acorn. You examine the latter, for instance, and you will find the organic atoms of which it is composed, arranged in a certain, definite, and uniform manner, in strict obedience to a special *affinity*. That the particles thus arranged possess a special *susceptibility* is easily demonstrated by the action of certain exterior agents upon them.

Thus, the acorn lying dry upon the table, manifests no change any more than a piece of chalk lying by its side; but let a certain degree of caloric or heat and moisture be brought to bear upon it, and a change immediately commences, which, continued under the guidance of the special affinity among its particles, soon results in the development of a miniature oak. But the piece of chalk exposed to the same influences is only a piece of chalk still; thus demonstrating that the acorn, though passive or dormant, possessed a susceptibility peculiar to organized matter.

If you thus, see clearly what we mean by *vital affinity* and *susceptibility*, as the elementary properties of all organized living matter; you are prepared to understand the effects of a high temperature, both as a predisposing and exciting cause of disease. Caloric is one of those inponderable agents capable of pervading all matter, whether organic or inorganic; and its effect is to expand all bodies by causing the atoms of which they are composed to be separated farther from each other. Hence, it is the great antagonistic power to affinity whether simple, elective, or vital. Its direct effects upon the living tissues of the human system, constitute no exception to the general law of its operation upon other matter. Every successive addition of caloric or increase of temperature increases the expansion of the tissues, and of course lessens, in the same proportion, the vital affinity between the atoms of which the tissues are composed. If you wish for proof of this you have only to immerse your finger a few minutes in water of as low temperature as

can be borne without injury; fit a ring accurately to it, and then immerse it the same length of time in water as warm as can be borne, and you will find the size of the finger so increased that you will probably be unable to get the same ring on or off. But caloric not only expands living tissues, thereby diminishing vital affinity, but it also *increases* their susceptibility. It is chiefly by its power, thus to diminish the tonic or compactness of the tissues, while it increases their irritability or susceptibility, that caloric or a high temperature becomes an efficient predisposing or exciting cause of disease. Acting more directly on the cutaneous surface, and both by continuity of structure and close physiological sympathy, also on the whole internal mucous surface, a high atmospheric temperature renders these structures morbidly sensitive, while their expansion renders them more lax, and thereby puts them in the most favorable condition for sudden and rapid fluxes of fluids into and through them. Hence it is, that in the midst of summer all classes and all ages of people are more or less disposed to intestinal-affections, characterized by increased flow of fluids, such as diarrhœa, cholera morbus, etc. What is thus a predisposition in all classes, becomes, in children at that age when the mucous membrane is yet undergoing development, as already described, sufficient to constitute positive disease. If to this is added further depressing and relaxing effects of confinement in the nursery, or in the impure air of narrow streets and alleys, inhabited by the poor, and the smaller quantity of oxygen inhaled when the atmosphere is rarified by a high temperature, we shall have no difficulty in explaining the annually destructive prevalence of bowel-affections in young children, during the hot months of July and August.

But, gentlemen, I have unconsciously spent so much time in the present explanatory digression, and in the preceding examination of these children, that all comments on the pathology of the diseases under consideration, and on their treatment, must be deferred until the next clinic hour.

[*Continued in the next Number.*]

SURGICAL NOTES FROM THE ARMY.

ARMY OF TENNESSEE,
CAMP BETHEL, *June 16, 1862.*

D. W. STORMONT, M.D.,
Sec'y Esculapian Society,

DEAR SIR:—I did not intend that this letter should be pre-faced by an apology, as I had many *notes*, taken under a variety of circumstances, varying from the din and smoke of battle, to the cool and quiet of the hospital; from which I *intended* to cull something that I hoped would be of interest. Those *notes*, by *mistake*, are on their way, I trust, to my home in Paris. Why I did not write sooner is due to the fact that I have been waiting for the rebels to lay down their arms and surrender, so that I could leave without a *fight* behind me; and also, from the fact that I hoped to be with you in person at our next meeting, and I may be yet.

The few lines sent will be devoted to generalizations, as I cannot mention special cases; and I will devote them to recording a small part of an experience which has not been small, during the past year. There are questions of importance, which are yet discussed in our Journals. And I shall state my opinions, based upon observation. I cannot go far into the discussion of these things, but will copy the original notes, taken on the field, of two or three cases: "showing the effects of chloroform," and which may assist in settling the point, as to whether it is or is not a "depressing agent."

On Saturday, at Donelson, there was brought to the field-hospital, Alex. G., of Shawneetown; within the previous ten minutes, he had been struck with a missile, which had inflicted a terrible compound injury of the right thigh. The wound through the integuments was apparently incised, in the shape of a Y, and about nine inches in length. The middle and lower thirds of the femur were reduced to fragments, while the flesh within the skin was a pulpy mass. The case determined itself; and amputation was immediately settled upon.

The patient was one of the finest specimens of muscular development I had ever seen; his spirits were buoyant, and he was willing to submit to anything. The question was, "shall we wait until reaction takes place?" as his pulse indicated great physical depression. Nothing else stood in the way of immediate operation; and as the wounded were coming thick and fast, it was determined to proceed. The napkin and sponge holding the chloroform were applied in the usual way; and not more than three inhalations had been taken, before the pulse rose rapidly in volume, and decreased in proportion in velocity. The extent of the injury necessitated a very high operation, and the saw was used within three-fourths of an inch of the trochanter major. So close, indeed, was the resection of the bone made to the articulation, that it was thought, at one time, to remove the head of the femur; but such an operation not being imperative, it was abandoned. The flaps were brought together after a couple of hours; a good stump was obtained; and the man recovered without an untoward symptom; and, to use his own words, in a letter to myself, "there was not a thimbleful of matter from the cut." Here was a case which presented every phase on which a safe opinion might be predicated. The health; the strength; the moral and mental courage; the extent and severity of the injury; the extreme prostration, indicated by the rapid and feeble pulse, and the anxious expression of the countenance; and the prompt and complete reaction on the first administration of the anæsthetic, would lead us safely to the conclusion that chloroform is a stimulant, under certain circumstances. When the vital powers are overcome or held in abeyance by an injury, then it is, the chloroform, like any other agent, calculated to relieve or unloose a chained vitality, becomes indirectly not only stimulating, but supporting in its character. At the close of the operation, and while yet under the influence of the agent, the pulse, in volume and rhythm, was at a fair, healthy standard. I will say here, in connection with this case, that after the removal of the limb from the table, I took from its bed, among the posterior muscles of the thigh, a shell, intact, known as a *twelve pounder*. Its diameter was $4\frac{1}{2}$

or 5 inches, a perfect sphere, without any apparent connection with the incised wound in the skin. The patient sat up and held the edges together, while I inserted the stitches in the flaps.

CASE II.—John E——t, aged 17, was struck with a round ball, one ounce, which grazed the anterior face of the thigh, ranging across and backward, completely severing the left seminal cord, and making an incision in the serotum, from above downwards, two and a-half inches in length, passing through the perineum obliquely, and lodging against the tuberosity of the ischium, on the right. The nervous depression was very great; pulse ranging from 130 to 140; countenance pale and anxious; disposed to sigh frequently; thirst unquenchable. I was alone; but provided with a field knapsack. I administered chloroform until the pulse rose perceptibly; gave a small dose of brandy and water; and continued the use of the chloroform. While under its influence, I ligated the spermatic artery; removed the left testicle; cut out the ball; closed the wound; and when he was restored to consciousness, neither his pulse or appearance indicated that there was much the matter. He is now with his regiment, the 8th, doing duty.

I can cite a score of similar cases, presenting every degree of severity, but all attended with extreme depression, in which chloroform produced the most salutary effects upon the pulse; and were I brought in connection with a patient, where the use of this agent was demanded, no degree of prostration, however intense, would induce me to withhold or delay its use. I refer, of course, to those cases where the depression is consequent upon recent injury, as it is in this connection that I would discuss its effects.

AMPUTATIONS, AND OTHER MAJOR OPERATIONS.

This is a heavy text, but I will try to be brief. Experience has taught me that however much good surgery may be taught, there is a good deal of bad, practiced; and a vast amount of unnecessary mutilation. The first question is: What amount of injury will justify an operation? This is, of course, dependant on a thousand outside influences, which must be thrown on the

balance for and against. On the field, where an operation is unavoidable, the *sooner the better*. If reaction is slow, *give chloroform*; relieve the pain; remove the effects of the shock; unloose the vital powers, which struggle hopelessly against an overwhelming injury; and then the sooner the system is relieved from the torn and lacerated limb, and a clean cut supplies its place, the better for the patient and the surgeon. *Primary operations are alone successful in saving life*, where it is life or limb, and they must be performed prior to, or during the stage of reaction. They must be performed on the field, before the removal of the patient, or the chances are lessened a thousand fold. There are what are called secondary operations. These are made up of the *removal of a limb*, (after the stage of healthy reaction is passed,) *and the death of the patient*. I will endeavor to make myself understood without being prolix.

When a patient suffers from a compound injury made up of bruised and lacerated flesh and broken bone, without involving the loss of the important vessels, the rule is to *amputate*; the *books* say amputate; professors of surgery, who visit our battle fields with a score of students at their heels, say amputate; and the students at the professor's heels *do* amputate. It matters not to them whether the wound is four hours or four days old, off goes the limb, and out goes the patient; for I challenge denial when I assert that 99 of every 100 of those who were operated on during the *irritative* stage died. This irritative condition commences from 12 to 48 hours after the reception of the injury, and continues from 7 to 20 days, or longer, according to circumstances; and there is no opportunity for the use of the knife during that period, be it long or short. Here, among these cases, conservative surgery finds its field of labor, and the conservative surgeon his element. The knife, for the removal of a limb, is foreign to his thoughts; but every energy is exercised, not only to save life, but to save the important member. He watches his patient closely; sustains his strength; guards against accidents; notes his pulse; and, finally, when the system has become accustomed to the injury, and manifests its regained power and equalized action, by the

formation of healthy pus, he asks himself the question, "How little can I venture to throw away?" and acts accordingly. Conservatism, *even in military surgery*, will stand the test; and no sooner is the *itch* for cutting allayed, by an overplus of work, than the most devoted tinkerer with the knife is more disposed to try to save a limb than acquire skill. It may be that I am reviewing only *two* of the *three* sides to the question, and am not judging impartially; but time will, I believe, bear me out fully in all important points.

At Donelson, I worked for four days, in the rear of my division, most of the time dressing the wounds on the spot where the patient fell. During that fight, I dressed 118 wounds, involving many minor operations, and performed 16 capital operations. Not one of the operations performed on the field had an unfavorable termination, while of those where I was *compelled*, as a *dernier resort*, to use the knife, two days after the battle or longer, *scarce one lived*. It is true the latter were few, but they sufficed to prove to me conclusively, that when the first opportunity has been lost, the second rarely or never presents itself: unless connected with some untoward circumstances, rendering extreme measures necessary. Your patient will die if you operate, and if he survives the shock, passes the irritative stage, aggravated by transportation, the conservative surgeon will always have sufficient faith in the skill of nature to help him save a limb, and with it a life.

I will pass from Donelson to the post hospital at Savanna, where our worthy PRESIDENT found me with 1685 wounded soldiers, from the battle field of Shiloh. The surgery at this point was conservative through compulsion. Overwhelmed with the rush of patients, and being compelled to create something out of nothing, it was many days before I could give a thought to other than administrative duties belonging to my position. Among the assistants assigned me were only *two* who had any practical knowledge of surgery. On visiting the hospitals, and taking a general view of all the cases, I could only say, "*Wait*, give them time. For eight or ten days after the battle, I still said wait. Many of the wounds were destructive in their char-

acter, and the knife was the only remedy; still I begged them to wait; because not a single case had yet recovered from the shock, or passed the irritative stage which followed. The pulse was rapid and feverish; the face flushed; the wound angry, and discharging a bloody serous fluid; the immediate and adjacent parts to the injury were sensitive to the touch, and the whole system controlled by it, and morbidly irritable. I was winning no enviable reputation fast; and yet, knowing this, I begged them to still wait. On the 2nd Monday following the Sunday's fight, four amputations, one of the thigh, one of the leg; two of the arm were performed in a hospital, under the control of two surgeons from the East. On the next day, there were *three* funerals, and on Wednesday *one*. The four cases *died*. The surgeons were alarmed, as they had a right to be; and again I said *wait*, so far as the *rest* are concerned; and wait they did. There were causes operating on these cases, and against them, that I will briefly narrate. Many of the wounded were stricken down on Sunday, and lay on the field for many hours, until the lost ground was retaken. They were piled into ambulances, taken to the boat, and shipped to Savanna. Here they had shelter and food; but long before we could secure the comforts which are indispensable to the *amputating* room, the first *chance* had passed by, and the only hope was to await the second. From the 12th to the 14th day, I commenced work: wine, tonics, and good food had been doing their work, silently but surely; and I trust I may say, without egotism, that many a poor but gallant fellow is living to bless that word, *wait*. It was at this time that Dr. TenBrook dropped in, and put his shoulder to the wheel, with an energy and good-will that lifted *me* out of the slough of despond, into which I was fast drifting, together with a couple of hospital's full of wounded. There were not many operations during his stay; but they were mainly of a character calculated to *illustrate* the subject in hand. There were some amputations of the arm, fore-arm, thigh, and leg. The patients, with but a single exception, had not suffered by the delay, and with that exception, they all recovered from the operation. There was a class of cases of greater interest, from

the fact that the injuries primarily were such as to justify amputation; and had they been met at the proper time, with ordinary facilities, even the *conservative* would have been inclined to remove the injured limb. As it was, they slipped through the hands of the surgeon, until they were seen with a view to the performance of an operation, which would save the limb without increasing the risk to the patient's life. With Dr. TenBrook the following operations were performed:—

Lieut. S., gunshot wound, fracturing the *tibia* for $5\frac{1}{2}$ or 6 inches, breaking it into fragments. Twice had a *brace* of *Brigade-Surgeons* met to cut it off, and twice did I enter a protest; the second time, in a very unmistakable manner. The time was not yet for operating, and amputation was *not* the operation. After extension was made sufficient to adjust the broken, but not comminuted *fibula*, and allowing time sufficient to allay the local and general irritability, an operation was performed, by which the removal of all the fragments of bone was effected, and the ends of the upper and lower fragments sawed off; under the influence of chloroform he bore the operation well. A simple fracture-box was applied, which allowed complete dressings; after a few weeks, he left for home, with a certain prospect of recovery, with a good, reliable, and useful leg.

J. V. H., a private, was injured by a rifle ball, which shattered the *ulna*, for several inches just below the elbow-joint. The suppuration stage was fully established; his appetite good; and his spirits rather above par. It was one of those cases which might have been operated on a week previous, and which would not have suffered from a few days' delay. In company with Dr. TenBrook, we witnessed the operation, as performed by Dr. ———, the surgeon-general from Wisconsin. The shattered fragments were removed; the ends of the shaft above and below clipped off; and the wound closed. In this case the capsular ligament was uninjured, and the integrity of the joint undisturbed. The recovery was rapid and complete. There were several cases similar to these, which Dr. TenBrook can give you in detail; and among them all, I do not know of a single case that terminated unfavorably.

During the week following the departure of Dr. T., I was visited by Prof. JOHNSON, of Chicago. Lind University. Time had settled the fate and determined the character of many of the surgical cases in the hospitals, and as the weather was propitious, and all things forward, we put in a week of honest, earnest, and successful labor. Many important operations were performed, carrying the knife and saw through almost the entire range of military surgery. The amputations were few, and bore a small proportion to the aggregate. The question as to the advantages of the circular over the flap operation was fully discussed, and *specimens* of both exhibited; and notwithstanding Prof. JOHNSON is high authority with me, still I will have to see better *recoveries* and neater *stumps* than I have yet, ere I give up the neat, safe, and reliable stump, resulting from the circular operation. There were three resections of the humerus, for injuries to the shoulder-joint: all did well up to the time of my departure, and each would have justified *amputation* on the field. I might go on *ad infinitum*, but I hope, at some future day, not far distant, to present you with a paper on the subject of military surgery, differing I trust from a hastily written letter. I have many *notes*, some I hope of value; but I wish them, even in a new and more carefully prepared dress, to go into the esculapian crucible, before I print them. Some of the ideas deduced from experience will not accord with the surgery of the wars of Napoleon or the Crimea. There is too much surgery practiced, such as it is, and too many mutilations are justified by recognized authority. The surgical history of the army from the North-west is being, or will be, written; and the writer has a splendid theme to urge on his pen. It is to be hoped that the historian will be just and fearless, in the performance of his duty—not his task; and that the Department will never again commit the gross errors which have marked the campaign of 1861-2. More anon.

I am, my dear Dr., with high regard, yours, etc.

HENRY W. DAVIS.

Army Correspondence.

MEMPHIS, TENN., Aug. 9, 1862.

MESSRS EDITORS:—Having been more or less sick with the effects of climate and soldier's life, for many weeks I have neglected you, as well as my other correspondents. Now, however, I am nearly recovered, and resume my pen, my catlin, and all my hospital implements and duties.

The military position and quiescence of the army does not favor the presentation of large surgical lists, at the present time, though the skirmishes give a continual sprinkling of cases, and now and then, a shot through the boiler of a gunboat results in a fearful catalogue of burns. A case of wounded intestine was very successfully treated by my assistant-surgeon, Dr. J. M. WOODWORTH, of Chicago. The patient received a stab with a knife, in the left iliac region, letting out the small intestines, so that they hung down externally, and were more or less covered with dirt in the scuffle. The knife, in some unexplained way, made three cuts into the intestine. Dr. WOODWORTH very carefully cleaned the viscus, and then folding in the cut edges, so as to bring the peritoneal surfaces in contact, closed the orifices with silk suture. The gut was then returned, and the external opening also closed with five stitches. The patient was put to bed, or rather to blanket, for beds are *non sunt* in the army, and a starvation regimen enforced, for ten days. The result was that he recovered, without the shadow of a bad symptom. At present, there is no tenderness on pressure, but there is an appearance as though the locality of the wound was about to become the seat of a hernia.

I mentioned, in a former letter, that at one of the fights in front of Corinth, I introduced, among the surgeons present, the idea of primary resection, hoping thereby to diminish the fearful mortality which follows military amputations. The circumstances were favorable, as the locality was elevated and healthy, and the patients were not obliged to be carried about on marches. The result went to show that no change of man-

agement can divest the cases of femurs shattered by musket balls, of fearful peril. At that battle, we resected the shattered ends of the shaft of the femur in two cases, and amputated the thigh in a third. In the superior extremity we resected two elbows and one shoulder, and amputated one forearm, making in all seven cases. The result was that all the three cases, involving the thigh, died, both the amputations and the resections terminating alike unfavorably; while in the superior extremity, the cases of amputation and the resection all lived, and did extremely well.

I am informed that Congress has passed a law, cutting down the perquisites of commissioned officers, in such a manner as to diminish the compensation of a surgeon by about three hundred dollars a-year. I have not been able to get a copy of the act, but I am informed that the diminution is made in the allowance for horses, in the following manner. Every mounted officer is entitled to have a certain number of horses, according to his rank, surgeons being supposed to have four, in time of war, and a certain allowance of feed, valued at eight dollars a-month, was furnished for each horse. But whenever the officer could dispense with a portion of the horses, without detriment to the service, he was allowed to do so, and to draw a commutation for the unused feed, in money. By many years usage in the regular army, surgeons and others were accustomed to keep only one or two horses, and draw the commutation for the others, as part of their pay. This commutation is now cut off. I fear the effect of the change will be still further to diminish the supply of medical officers, of whom the number is already very scanty.

The health of the army is excellent, the sickness being much less now than during the spring months. The number of cases under my treatment, during the last four months, is nearly as follows:

April,	388
May,	337
June,	278
July,	163

Total, 1171

The mortality, during this time, has been a little less than 1 per cent. of the cases, exclusive of those killed in battle.

As the season advances, the form of the sickness changes somewhat, though the cause seems to be the same, viz.: portal congestion. There is a curious relationship observable between the fevers and the class of diarrhœas. When the portal system is congested, if the patient has diarrhœa he frequently escapes fever, but if the bowels are not loose, fever results; hence the prevalence of diarrhœa is in inverse ratio to the fevers, as is shown by the following table:

	April,	May,	June,	July.
Fevers,	45	58	111	49
Diarrhœas,	153	88	65	44

The fevers have steadily increased, and the diarrhœas diminished until July. In the latter month, all sorts of disease, except the chronic form, underwent a marked diminution. Most of the cases of fever are remittent, though the intermittent and continuous forms are common. The typhoid fever, such as we see in Chicago, scarcely exists here at all, although there is a fictitious resemblance to it produced by the frequent occurrence of mild diarrhœa in connection with remittent fever. The diarrhœa, in such circumstances, is not dangerous, and evidently serves to mitigate the severity of the fever, so that I commonly prefer not to interfere with it very much, but let it run until I have removed the portal congestion which caused it.

Notwithstanding the supposed exemption of the negroes from the climatic diseases of the South, I am constantly seeing cases of the same fevers and diarrhœas among them, which prevail among the soldiers, and apparently of equal severity and frequency. I am inclined to think that their power of resisting Southern climatic influences is greatly overestimated, though there is doubtless something to justify the common opinion on the subject. It is positively certain, however, that they cannot endure with impunity exposure to strong malarious influences, for they are subject to all the diseases which such influences produce.

A slight examination of the operations of the medical depart-

ment of the army, throws light on the enormous waste of our troops; a waste which is so great that the regiments now here cannot bring more than half their original strength to battle.

1st. There was little or no medical inspection of the recruits at enlistment. Officers, whose commissions depended on filling up their companies, cared little for the quality of the men, if they only got the number. To them the medical examination only appeared as a terrible spectre, depriving them of their recruits, and dissipating their hopes of office. Hence, in most cases, no inspection was had at all, and in others, only an inspectoral farce was enacted. For instance, when I was post-surgeon, at Camp Douglas, I received an order to repair to head-quarters, to examine a lot of recruits. Now, the army regulations require that each recruit shall be stripped naked, and inspected separately, over his whole person. Judge of my astonishment, therefore, when I was shown out upon the parade ground, in a cold winter day, with four inches of snow on the ground, and a whole regiment was paraded before me, which I was ordered to examine forthwith. I informed my superior officers, that no such inspection could be made there, as the regulations required, and that all I could do would be to pass along the lines, and pick out such obvious cases of blindness, maiming, etc., as could be seen at a glance. Accordingly, I went down the lines with my assistant, and removed six or eight bad cases. So far as I know, those recruits never had any other examination. Of course, vast numbers of men went to the field who broke down on the first hard service, and either were discharged or sent to the hospital.

2d. All the officers, both medical and others, were inexperienced in the economizing of forces, and when a man became sick, and remained so for a few weeks, they did not bear in mind the prospect of future recovery, but applied for his discharge. The higher officers, with equal prodigality, granted the request. Hence, many men were discharged for sickness, who were merely undergoing a rather protracted acclimation, and who, were they now in service, would be among the most hardy of the soldiers.

Large numbers of the sick were sent back to general hospitals in St. Louis, Mound City, Paducah, and elsewhere, who should have been kept for recovery in the regimental hospitals. The effect was just this: the surgeons in general hospitals do not feel so sensibly the necessity of keeping up the numbers of the various corps, as do field-surgeons, who are constantly associated with the regimental officers; therefore neglecting the economy of force, they seek to relieve their hospitals from overcrowding, and themselves from overwork, by procuring great numbers of discharges, and furloughs for such patients as are able to travel. Hence, vast numbers of men, who left the army with diseases of a temporary character, have never returned; and often the captains are surprised to learn that they have been discharged, when six weeks rest and treatment should have returned them to duty. The discharged men, of course, are lost; and the looseness and negligence in compelling return after furlough, renders a leave of absence as bad as a death, so far as the army is concerned.

These various causes, combined with battle and permanent sickness, have reduced the army to its present weakness. Some regiments cannot parade over 250 men under arms, and very few can present 700. The remainder, however, are hardy, well acclimated, and the officers have profited by their experience. Hereafter, the wastage by unnecessary discharges, will be very slight, and that by sickness only moderate. The actual number of deaths by sickness in the field-service of this army, has been very small; and we think that perhaps we should have actually saved many lives, had we kept more of the sick in the fresh air of the hills, and sent fewer back for the comforts of large hospitals.

Dr. JEWELL, of Attila, Ill., Demonstrator elect of Lind University, has left the army, to make preparations for removal to Chicago. He served with great credit to himself and advantage to his regiment. Dr. WOODWORTH, of Chicago, is my assistant-surgeon, and is with me at Memphis. Dr. TAYLOR, of Galesburg, is either with the army near Corinth, or else with Gen. Buell. Dr. WARDNER, of Chicago, is division-surgeon in

Gen. Davis' division, I think. I do not know his present locality, but probably somewhere between here and Chattanooga. Dr. REILLY, lately your associate editor, is, I think, with his regiment, the 45th Ill. Infantry.

A very clear illustration of the causes of intermittent fevers occurred in my regiment, at this place. Our camp here is on a dry, healthy bluff, nearly 100 feet above the river. Company A. of Chicago Light Artillery, has been for many months, the most healthy company of the regiment, the sick list seldom being over four, and those very trivial cases. Since arriving at Memphis, however, they were, after a time, suddenly attacked with a little epidemic of ague, 10 or 15 cases occurring at once. The officers suspected that the fault was in a spring from which they drew water, especially as the "Seeesh," who encamped here before us, held the same spring to be so unhealthy that they put a guard over it, to prevent their men from using it. The spring, however, did not seem to me to be the cause, as it appeared to be copious, clear, and entirely free from organic matter. On a little further inspection of the ground, I found that within ten rods of the edge of the area occupied by that battery, there was a shallow depression in the soil of about one acre in extent, which a week previous, had contained stagnant rain water, being in fact a little temporary marsh. This had dried up in the hot sun, and the onset of the intermittent was simultaneous with the drying of the pool. As soon as the ground was well dried the epidemic ceased. I cautioned the officers, that in the future it would be necessary either to remove the camp, or provide for drainage of the ground.

Sunstroke has been very rare among us; and all of our diseases have been of a mild type. On the whole, we have every reason to congratulate ourselves that this climate has been very far from deadly to our armies. Yours truly,

E. ANDREWS.

Selections.

THE CHLORINE AND MILK TREATMENT OF SCARLET FEVER AND THE TYPHOID FEVERS.

BY CONWAY T. EDWARDS, M.R.C.S.E.

The symptoms, development, and progress of scarlet fever and fever of the typhoid type, have been so continually brought under public notice, and so ably treated in every work on the practice of medicine, that it were superfluous to enter upon a consideration of them in this paper, and would not assist in any way the object I have in view, which is, to point out the beneficial influences which a chlorine and chloroform treatment, with a full diet of milk, exercise over these diseases.

It must not be understood that, in advancing these remedies to so prominent a position in the foreground, they are to be regarded in the light of specifics, or as interfering with the antiphlogistic treatment and regimen which the medical practitioner finds it necessary to adopt during the first stages of febrile disease; but, as possessing the important quality in themselves of at once destroying the putrid effluvia generated by, and thrown off from, the secreting surfaces of the stomach, alimentary canal, kidneys, lungs, and skin, and endowing the system with power to bear the progress of the disease. These effluvia, so poisonous in themselves, on account of the large proportion of sulphuretted hydrogen which they contain, contaminate the air of the sick chamber, oppress nurses and attendants, and are most injurious to the patient. How important, then, must it be to remove them! This chlorine effects; its influence is no question of lengthened time; it commences at once, and continues during the whole course of its exhibition.

Now, as regards "a full diet of milk." From the very commencement of a fever, there is a very great loathing to all kinds of nourishment; the bare suggestion of food creates a shudder, which expresses, more than words can do, how repugnant the idea is to the feelings.

Adopt the once received and re-entertained Brunonian system; give *ab initio* nourishment and tonic medicines, and as the disease advances, with increase of weakness, and ever progressing waste of solids and fluids of the body, perhaps the real nature of the attack may be suddenly developed and resist every remedial means to overcome it. In no disease is the truth of

this more apparent than in typhoid pneumonia. Take a false view of the real nature of the attack; see in the fever everything save the current of inflammation which runs beneath it; suddenly the real truth will be developed, and the engorgement of the lungs is but the precursor of the fatal termination which will rapidly ensue. All antiphlogistic treatment would be useless; calomel and opium and antimony have no time to act, and the patient dies.

But the hourly increasing weakness and waste of the system are very formidable symptoms during the course of fever; are these to be ignored, and no attempt be made to meet them? Had we but a life-sustaining diet, simple in itself, and not only agreeable to the patient, but eagerly accepted by him—a diet which in itself should contain meat and drink of the most unstimulating nature—how great a boon it would be to the sufferer!

What writes Dr. Thielman, the Russian physician, in his treatise on Fevers? “He had never seen delirium occur during the progress of *any* fever, under the influence of a full diet of milk, as *after broth*! It is not only well borne, but is easily assimilated, and endues the system with *power to resist* disease.” This is exactly what is wanted. How does it agree with our own experience? Yet, without going quite so far, if it only remained on the stomach with ease; relieved the thirst; sustained the nervous energy, thereby giving power to resist the disease,—important results would accrue from it.

It were needless here to enter upon the analysis of milk, or to show forth the reasons why it is the most life-sustaining of nourishments.

It is objected, that milk is indigestible, and therefore not fitted for a weak stomach; that the gastric secretion (analogous to the rennet of the calf) at once separates the solid from the fluid part, the former coming away, especially in children, untouched by the digestive organs. The theory looks well upon paper, but will not bear the test of experience. Curd itself is eaten with pleasure and impunity, not only in the delicious junket, as made to such perfection in Cornwall and Devonshire, but in the more homely form of closely-compressed curd, floating in its whey. Few beverages are more grateful to the palate, more refreshing, and more thirst-allaying than whey: it is the pleasantest and most cooling of summer drinks, and its effects are much more permanent than even water itself.

In giving milk to the fevered system you have at once this most refreshing fluid generated in the stomach, and an unirrit-

ating solid formed, which in a greater or lesser degree repairs the waste of the living substance. The gastric juice converts the milk into what is popularly termed "curd and whey."

Now, as to the growth-giving and other nourishing qualities of milk, daily experience proves and shows, in the firm and excellently tinted skin of healthy infants entirely brought up, for seven or eight months, upon milk, its potent and genial influence. The mother, being in good health, supplies a nourishment which no science can equal and no art compound. It is nourishment particularly free from all irritating, clogging, and fever making principle. It is so curiously and wonderfully compounded, that up to a certain point the infant retains it; but beyond that it is rejected, sometimes from over-repletion, on account of its excellent nature, and sometimes from the eagerness with which it is taken.

In treating of milk as a diet especially for invalids, it must be understood that healthy, unadulterated milk is alluded to. This of course is very difficult to be obtained in large towns; almost impossible in the metropolis. In very circumscribed spots, in the latter are assemblages of stalls, capable of holding several hundreds of cows. The impure condition of the heated air is patent to all. It cannot be other than unwholesome. Seldom do the animals scent the fresh air, feel the sunshine, tread the green grass, or take any exercise! Their daily life is spent in eating the most milk-giving, and of course heat-producing, food. In summer, perhaps, long grass, vetches, peahalms, (cut and collected, it may be, for a day or two before use,) are given. In very limited space do they wear away their life in producing milk. The consequences need not be dilated on. The animals are mostly in a fevered state, many are directly diseased, and all produce a milk which (without inquiring too curiously into its composition when retailed to the public) is not healthy. This is not the milk to be selected for a fevered patient, and yet, boiled, it is preferable to a farinaceous or animal soup diet.

We will now turn to the bearing of what has been advanced on scarlet and other fevers.

About the year 1844, scarlet fever raged with some violence in the district where I had practised for many years. At an early period of the attack, typhoid symptoms developed themselves. The dryness of the tongue and fauces, the dark secretion on the gums, putrescent fœtor of the breath and from the skin, renal and alvine secretions, attested the dangerous nature of the disease. In Bath, a very extraordinary symptom fre-

quently developed itself, and seemed to be the sure precursor of death. This was a rigidity of the sterno-cleido-mastoidel-muscles, of a nature so great that they felt like rolls of wood beneath the touch; the smaller muscles soon put on the same action, and the sufferer seemed in dying to be strangled. In the country district this formidable complication did not occur; but one family, fearful that an only daughter might take the disease, left for Clifton. Before six weeks had elapsed, this child was seized with the complaint, and died.

In the early days of the epidemic, several fatal cases occurred in my practice, and something akin to a feeling of regret came over me when summoned to any new case. But an accident opened up a mode of treatment, which soon changed the fatal tendency of the attack. Two children, living at the National School, Bathford, took the complaint. They were relatives of one of the nurses at the Bath Hospital, and she came over to nurse them. The symptoms in one child were urgent from the beginning, and both head and chest suffered severely; the throat was studded with sloughing spots, and greatly swollen; the breath and all the secretions gave out the putrefactive fetor. The cases seemed to be of the worst kind. About the fifth day the nurse said: "She has been better, Sir, since she used that last gargle; the great restlessness is gone, the rambling talk has ceased, and all putrid smell from the breath and evacuations has left. I believe," she continued, "it was the gargle which did it, for she swallowed the first dose." This gargle was composed of a solution of the chloride of lime, alum, ustum, compound tincture of iodine, water, and a little tincture of capsicum.

On examining the throat, I found the nurse's statement to be correct as to the breath; and not only had this beneficial change taken place, but the sloughing surfaces were assuming a brighter red, the sloughs were evidently contracting or curling up, and the tongue and gums were becoming moist. There was also a quietude about the look and features, which indicated that the nervous irritability was passing away. The nurse was so positive as to the cause of this favorable change, she was directed to add a drachm of the solution of the chloride of lime to two pints of tepid water, with a little lemon-juice and sugar, and give it as diet-drink to the patient. This, with a gruel and sago diet, and ammoniated effervescent mixture, and an occasional dose of rhubarb and grey-powder and James' powder, were given, until it was safe to administer tonics and good diet. The disease spreading, the same diet-drink was adopted, and the use of chlo-

rine extended by directing the body to be sponged with tepid water containing it, twice a day. After the adoption of this treatment no fatal case occurred.

At the termination of the epidemic, I read a paper on the subject before the Bath and Bristol branch of the British Medical Association, being justified in so doing from the numerous cases which terminated successfully. One or two of the members expressed themselves dubious respecting the effects produced by such means, when the physician who had permitted the nurse to attend on her relatives rose and said that "he could vouch for the accuracy of the writer's statements, for his nurse had narrated to him the results of the treatment." This paper I subsequently published. A week after its publication I was agreeably surprised at receiving a polite note from Mr. Martin Ricketts, of Droitwich, (a total stranger to me,) stating that "he had perused the paper with great interest and pleasure; that he could confirm all that I had written on the subject of the good effects of chlorine in scarlet fever; and that, strange to relate, a similar accident to a child using a chlorine gargle had led to the adoption of chlorine in his practice; lately, however, he had used a preparation made by the Apothecaries' Company at Liverpool, and termed *chloriform*, which appeared to him to possess all the antiseptic powers of chlorine, with a sedative influence peculiarly its own. The dose was from five to thirty minims. He requested my acceptance of a small quantity, regretting at the same time that it was so expensive." In this preparation lay hidden a grand secret—a glorious gem, sparkling, and beckoning to any scientific mind to free it from its prison-house. Its advances were unheeded, until Dr. Simpson first recognized in its component parts something more than the composition of either—a something which possessed all the anæsthetic properties of that fluid without its nauseous ones. What is its position now? It is first on the list of alleviators of human suffering; and the discovery of it should have won for its discoverer a world-wide testimonial. I soon recognized the preparation, made public towards the termination of 1844, to be the same as that sent me by Mr. Ricketts; and, like other medical men, freely experimentalized with it on animals, insects, etc., and then on our suffering fellow-creatures.

On the rebreaking-out of scarlet fever and typhoid epidemic of the usual form, I prescribed chloroform; but as it did not remove the effluvia so effectually as chlorine I administered the latter in combination with it. It was, however, observed that after every dose of chloroform a great calmness and inclination

to sleep were produced, unattended with any adverse cerebral symptoms.

The beneficial effects which the use of these remedial means produced in scarlet fever, likewise resulted from their exhibition in typhoid fever; so that I had every reason to be satisfied with the treatment.

But the power of preparations containing chlorine over infectious fevers was known long before the disinfectant principle was discovered to exist in that gas. The celebrated Dr. Parry, of Bath, was an advocate for the use of muriatic acid, both externally and internally, in fevers; but the beneficial influence of that medicine was not referred to the chlorine it contained. That acid is now termed hydrochloric, from its chemical constituents; and in the present day, when the chlorate of potass is freely used in malignant fevers, sore-throats, etc., it is not frequently you find it acknowledged that to the liberated chlorine are the good results attributed. Read any work on fevers, from the school book of the day to the popular *brochure* of the minute, and see what little stress is laid on the value of chlorine as an important curative agent.

Since my residence in London, numerous cases of scarlet fever have come under my care; and, with every disadvantage, in many instances, of impure air, small, ill-ventilated rooms, indifferent diet and nursing, two cases only terminated fatally, and these were seen some days after the disease had first appeared.

It must not be imagined from what has been advanced that these fevers were treated solely with chlorine, chloroform, and milk. The antiphlogistic system was invariably practiced at the commencement of the attack, involving sometimes abstraction of blood, counter-irritation, chloride of mercury, potassio-tartrate of antimony, and purgatives, with gargles of capsicum, alum, iodine, and chloride of lime solution. It is after the first two or three days of this treatment that the internal and external use of chlorine and chloroform is so beneficial, and the milk diet can be depended on—or, if the stomach can bear it, gruel made as thick as good cream, with two-thirds milk; and when we consider what a state of irritation the mucous lining of the primæ viæ must be in, and how certain glandular structures are affected in all typhoid fevers, such a diet cannot but prove most soothing. In conjunction with these, sponging the body twice a day with tepid chlorinated water, change of linen and of bed (where two beds can be placed in the room), will contribute greatly to the general welfare and convalescence of the patient; whilst wine, ale, soups, and jellies can be deferred until the ter-

mination of the complaint approaches or urgent symptoms demand them.

I have now brought my observations to a conclusion, with the hope that some other practitioner may be induced to publish his experience of chlorine and chloroform in fevers.—*London Lancet*.

Brompton-row, June, 1862.

EPILEPSY.

AFTER THE FRENCH OF HERPIN.

By EDWARD SUTTON SMITH, M.D.

ART. II. Continued from page 438.

Interval between Attacks.—When one does not follow step by step the succession of epileptic attacks, they will be struck by their apparent irregularity; but if a certain lapse of time be considered as comprising a great number of acces, and this time is divided into equal periods; or, which amounts to the same thing, if you will take in fractions the daily minimum of the acces during irregular periods—for instance, during such and such treatment—it will be found that the return of the attacks is conformable, at least during a certain time, to a kind of regular law that was not at first suspected.

When we examine with attention a long series of the dates of acces, and keep account of the order by paroxysms when they occur, the intervention of certain accidental attacks, or the non-arrival of the ordinary return, we shall arrive at the conclusion that, though without the regularity of intermittent fevers, the crises of epilepsy are much less abnormal in their appearance than has been generally supposed, and that they are really regular, which distinguishes them from all other nervous crises.

In incurable cases, sooner or later the return of the acces is manifested by an acceleration, which is a bad sign. This gradual acceleration, generally slow, though sometimes rapid, is the indication of the course of the disease.

I have encountered all degrees of frequency; from more than one hundred a day, down to a single attack every four or five years. The most numerous category is that where patients have had from one to six attacks a week. In hospitals, in consequence of there being no infants, monthly attacks are usually those which are reported.

Acces return and follow two distinct courses; either by isolated acces, or by paroxysms; sometimes these two kinds com-

bine, and at other times change from one to the other. The first course is three times as frequent as the latter.

Generally, the paroxysms come on about every month, lasting from one to three days, and are composed of from one to six acces.

Accidental or very intense paroxysms sometimes cause death.

Diurnal acces are sometimes as frequent as nocturnal, if we take for a day the time that elapses between the rising and retiring of the patient.

The lighter the crises are, the more apt they will be to appear during the day.

Nocturnal attacks are generally more intense, and indicate a higher degree of the malady.

In general, the interval between the attacks grows shorter as the disease advances.

Nature of Acces—Section First—Type of an Acces of Epilepsy.—An individual, apparently in perfect health, without any premonition, gives a cry, and suddenly falls, deprived of intelligence. At once tonic convulsions commence at some point of the locomotive system, and ultimately extend to all the voluntary muscles. The contraction, in proportion as it is more energetic in the muscles of one side of the body than in those of the other—in the extensors than in the flexors, in the elevators than in the depressors, in the constrictors than in the dilators—induces such a variety in the fixed attitude of the members of the trunk, head, or the expression of the countenance. From this immobility of the muscles and occlusion of the glottis results, as has been well shown by Van Swieten* and M. Beau, the suspension of respiration, then all the signs of asphyxia; we will add, as a natural consequence, the accumulation of saliva in the mouth, arising from the compression of the salivary glands.

This period is called *tetanic*.

After this first division, to the tonic phenomena are added, first, partial, then general, clonic convulsions; which, according to their predominance in such or such muscles, or such and such regions, produce the most irregular movements and hideous expressions of the face.

Respiration, incompletely re-established by these movements, is performed with considerable noise; you hear the noise produced by the passage of the air through the mucus or saliva, which soon appears upon the lips in the shape of foam. This foam is sometimes reddened by the blood that arises from

* Commentaria in H. Boerhaavii Aphorismos, Parisiis, 1758, tome III., p. 398.

the biting of the tongue. The urine passes involuntarily, moistening the garments of the patient.

This the second phase, that of the *shocks*.

The *râle* and the rigidity evidently persist after the clonic convulsions, then diminish, and finally cease more or less rapidly during the third period. This latter is marked by muscular relaxation, coma, and stertorous breathing. It is the perfect image of that condition which is known by the name of *cerebral commotion*. The loss of intelligence continues; the pupils are greatly dilated; respiration is low, profound and stertorous; the face is less colored; the pulse, from having been rapid during the preceding periods, now gradually lessens.

This is the snoring period, or *comatose state*.

The patient wakes up as if from a prolonged sleep, astonished, exhausted, terribly fatigued, and with a pain in the head. Has no recollection whatever of the painful scene that has just passed. Can articulate a few words, but soon falls into a sleep that is really reparative.

This fourth period is that of *return to consciousness*.

The duration of the first period is very short—about a quarter of a minute; each of the succeeding ones is about four times as long as that which immediately precedes it.

Such is the type of a complete attack of epilepsy; such is the result according to my idea, of the numerous descriptions given by authors of the comparison of a number of facts; and finally, of my own observation. But this type, like all others, is in reality but a generalization, and we must not expect to find it exactly reproduced in the majority of epileptic cases. The different degrees of intensity, and the greater or less duration of the access, present numerous varieties; more numerous than any physician would suppose, who had not specially studied this disease.

The study of all these varieties has never been methodically pursued, and this subject, alone all-important from a diagnostic point of view, we shall undertake, though without the pretension of calling it complete, for, to accomplish that one should live in and epileptic hospital.

Section Second—Prodromes.—The prodromes are divided into *remote* and *near*; in this latter category are included those sensorial or convulsive manifestations that from their nature are intimately connected with an attack properly so called.

We have encountered prodromes only in nine individuals out of thirty-five; that is, in scarcely a quarter of the cases. Those observed were of a very variable nature.

Change of character: irritability, turbulence, violence, sadness, agitation, struggle against the attack.

Vertigoes.

Headache, congestion of the head, somnolence, general fatigue.

Nervous trembling.

Skin burning; sensation of cold; chills; sometimes paleness.

Nausea.

Diarrhoea; cholice, without evacuations.

But these prodromes as signs are so far from having that value that has been attributed to them. If the patient is watched a long time, and the precursory signs noted with care, it will be found that the prodromes are often wanting, and that even their appearance is not always followed by an attack.

Section Third—The Commencement of an Attack, and the Aura Epileptica.—The cases in which we can follow an attack of epilepsy from its origin are very rare, particularly in private practice. Even when an access has taken place in the presence of a physician (unless he has been forewarned) who is both attentive and placed in favorable circumstances, it is difficult to observe from its very commencement. But, happily, there are cases where the phenomena do not follow each other so rapidly; where it is possible to study the initial steps of the attack from the information furnished either by the patient or his friends.

The first attack that took place in Observation No. 2, commenced with a cramp or contraction with flexion of the two last fingers of the left hand; she then gave utterance to two or three screams, while her hand closed, her forearm bent, and her whole arm was raised in such a manner as to carry the hand towards the shoulder; the succeeding contractions were very painful; the head turned around; it seemed to the patient that the same sensation was about to pervade the whole body; consciousness was lost; and finally the young girl fell upon the floor, and had a well-marked attack. Same state of things took place in the next access. All these details are authentic, having been given me by the girl herself, without my directing her by questions; her friends, intelligent persons, confirmed the facts.

Observation No. 9—(Third Series.)—Miss W., of Brooklyn. Disease first manifested itself in 1859; interval between attacks about 14 days; always commence with cramps in the left foot, which gradually extend to the trunk, till the whole body is convulsed; has had as many as eight attacks in twelve hours. Came under treatment the 16th March, 1862; has never had an attack since.

We shall find a similar ease in observation No. 38. Painful cramp in the great-toe of one foot, which produced groans, and sometimes screams; the toes had a tending to turn up; the painful sensation, accompanied with a sense of fulness, gradually gained the limb, the thigh, the stomach, the chest, passed into the fingers of the hand; some of them turned, remounted to the shoulder, the side of the neck, the ears, the face, and terminated at the top of the head; then the patient lost her sight, the head turned upon its axis, or backward; consciousness vanished; the members straightened out and stiffened; the close of the attack was quite short, and marked by some shocks of the head.

As regards the fall, the duration of the *debut* always allowed this second young lady to sit down and sustain herself, otherwise she would certainly have fallen. Observe that, in this last case, the cramp sometimes commenced in the leg, the thigh, the fingers, etc., and sometimes passed from one side to the other, but always advancing from below upward on the same side. The details of this second ease were as correct as those of the first. Having been myself a witness to one of these eases, I can bear witness to their minute exactness.

I shall here cite Bonet*—interesting from the double point of view of the influence of the ligature, and the preservation of intelligence during the attacks.

“Many sympathetie eases of epilepsy have been cited, dating their origin from many different parts of the body, but none have ever been published where the affection commenced in the inguinal region. I observed a case of this kind in 1656, in the person of M. Rosselet, of Neufchatel, in Switzerland. He was a man 50 years of age, red hair, a *bon vivant*, and somewhat addicted to the society of the fair sex during his youth, as he himself said. At intervals he felt in the left groin a swelling like a small bubo; from thence a crawling sensation passed slowly down the thigh to the very sole of the foot. When it had arrived there, a kind of wind or vapor (*vapor quidam quæris aura*) mounted rapidly from this point to the brain, though it only reached the left side, as could be seen from the fact that the convulsions only affected the left side of the body and face, which was deformed by frequent grimaces. The patient lost neither speech nor consciousness, though this latter was altered, the vapor also reaching the nerves of the tongue. He said hesitatingly to me, in the midst a paroxysm, ‘*See, see, how this terrible evil torments me!*’ He experienced, at the same time, shocks in the arms and legs; this condition of things lasted

* SEPULCHURUM, folio 1700, t. I., sec. 12.

about five minutes." The patient, to whom Bonet proposed the application of the actual cautery at the point of departure and throughout the length of the course of the *aura*, refused in the most absolute manner. "He consented, however, to employ a ligature above or below the knee, so as to intercept the course of the *aura*. The moment that this latter commenced, and the patient felt the itching and tumefaction of the groin, he drew tightly around his leg a garter that always hung on his bed. He always succeeded in arresting the paroxysm, and gave up all other remedies. One evening, while dining with his wife and children, who had pushed the table against his bed, he felt the vapor coming on; the obstacles that prevented his taking his garter could not be removed with sufficient celerity; the vapor became all the more violent from having been so long compressed, and mounted with such fury that this eminent man perished in the paroxysm."

The following is the opinion of Esquirol on the subject: "In a great number of cases, epileptics, before losing their consciousness, feel a convulsive movement, a kind of pain; they experience a chill, a vapor (*aura epileptica*) on the head, the face, one of the arms, the hands, the thighs, the legs, the toes; these different feelings are propagated the whole length of the limbs, towards the head, and when this *vapor* arrives at the head the patient loses consciousness; then the convulsions are sometimes general, sometimes partial, and sometimes limited to the limb that was primarily affected."

As we advance in the seventeenth and eighteenth centuries, we find the cold vapor less and less frequently mentioned; it is replaced by spasms, cramps, convulsions, and shocks; and finally, in our time, criticism, the child of doubt, has denied the phenomena altogether.

From a close analysis of the most complete and recent facts, it seems legitimate to conclude that the prodrome described under the name of *aura epileptica* is nothing more than the first convulsive manifestation of the attack, taking place in a part of the system more or less removed from the brain.

To give a definite *resume* of the subject—

The functional alteration of the nervous centres, which constitutes an attack of epilepsy, usually invades those organs from the superior part of the cerebro-spinal axis to its inferior portion; but it may also commence at various points throughout the length of this system, as well as in its inferior portion. This last form is the severest of all.

I am inclined to think that the cry, which is the second phe-

nomenon at the commencement of an attack, is an expression both of surprise and of the pain caused by the convulsion. The cry is met with in about half of those epileptics that have complete attacks, but it is only constant and reliable in about a quarter of the cases. In the case of children it is often replaced by tears.

This symptom is never connected with vertigoes or incomplete acces. Generally speaking, the most violent attacks are those that are preceded by the cry or scream.

The fall is the third symptom of an attack; it is much more frequent than the cry; without, however, being constant, and may be so violent as to cause death.

When the period of cramp or partial initial convulsions is prolonged, the acces is more generally incomplete, or very brief.

One strong scream, on the contrary, indicates the commencement of a violent attack.

The more sudden the fall, generally the shorter the acces.

In a word, *the longer the debut, the less violent the crisis; the more sudden, the more intense the acces.*

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ON THE TREATMENT OF SUSPENDED ANIMATION UNDER THE INFLUENCE OF CHLOROFORM.

By WILLIAM MARCET, M.D., F.R.S., Assistant-Physician to the
Westminster Hospital, etc., etc.

In the *Medical Times and Gazette*, for July 20, I offered a few remarks on the phenomena attending the accumulation of vapors of chloroform in the blood, and insisted on the importance of watching the state of the respiration as well as that of the pulse during the exhibition of this anæsthetic agent. The number for October 28, of the same periodical, containing two new cases of death from chloroform, I may be perhaps allowed to return to this subject, my present object being to suggest a mode of treatment in these cases which to my knowledge has not yet been proposed; and considering the failure which has nearly constantly attended every attempt to restore animation suspended by an overdose or under the influence of chloroform, the following suggestions will be most probably of interest, and also, I trust, of practical utility.

It has frequently occurred to me that, in many instances, the final cause of death from chloroform was owing, not only to its anæsthetic properties, but also partly to spasm of the glottis. I do not mean, however, that the passage of the vapor of chlo-

roform through the glottis and larynx has the power of causing an involuntary closure of the glottis; and I cannot agree with Dr. Black, of St. Bartholomew's Hospital, who states:—"Any concentration of the vapor of chloroform which can be breathed is safe; any condition of dilution which causes the patient to cough or to hold his breath is dangerous, and if persevered in for half a minute, may be fatal." I believe a spasmodic closure of the glottis to take place occasionally, from the action of the chloroform which has been absorbed into the blood, and that this obstacle to the admission of air into the lungs, taken in connection with the narcotic or anæsthetic effect of the chloroform circulating in the blood, has been in some, perhaps many, cases the actual cause of death. Should this view be correct, it will follow that if air be allowed to enter the lungs by means of tracheotomy, or by opening the glottis with a trache-tube, or any other operation which will effect the same purpose, life will in such cases be saved.

It may be inferred that spasm of the glottis takes place occasionally under the influence of chloroform.

1st. Because several substances possessing anæsthetic properties are positively known, when present in the blood, to have given rise to closure of the glottis.

2nd. Because the symptoms of death from chloroform are consistent, more or less, with death from sudden asphyxia.

3rd. Because the *post mortem* appearances after death from chloroform may be accounted for by assuming that death has taken place from asphyxia.

In the three following cases, spasmodic closure of the glottis resulted from the presence of alcohol, carbonic acid, and sulphuretted hydrogen in the blood, the physiological properties of these three substances being allied, to a certain extent, to those of chloroform; and in two of the instances under our consideration, life was obviously saved by tracheotomy.

A very interesting case is reported in the volume of the *Medico-Chirurgical Transactions* for 1837, entitled, "Case of Recovery from the Insensibility of Intoxication by the Performance of Tracheotomy. By George Sampson, Esq." The patient, aged 31, was brought to Mr. Sampson's house in a state of complete insensibility, after drinking freely of beer, and more than a pint of brandy; all voluntary motions had ceased for at least four hours. The stomach-pump being used, drew off between three and four pints of fluid, the greater part of which appeared to consist of brandy. Every means of exciting vomiting was afterwards vainly applied; the man became more

comatose, his countenance turgid, and breathing more and more difficult; the pulse grew fainter, and was at last scarcely perceptible. He was then removed to the Infirmary, and a consultation was held with other medical attendants, who arrived in the course of half an hour; at that time every appearance indicated the rapid approach of death, and there was no ground to justify a reasonable hope of recovery. It occurred to Mr. Sampson, when standing by the patient's bed-side, that the extreme difficulty of respiration was owing to the existence of "collapse of the glottis," and with this view of the case, he strongly urged that a trial should be given to the operation of tracheotomy. The operation was accordingly performed, without loss of time, by Mr. Andrews. The trachea was no sooner opened, than the distension of the veins about the head and neck subsided, the violent efforts of the respiratory muscles ceased, and in about half an hour regular and easy respiration through the wound was freely established. At the same time the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist. He continued quiet during the night, but had no return of consciousness till the following morning. The case proceeded very satisfactorily, and the wound being healed in about three weeks, the patient was discharged cured.

This case is particularly interesting, for the analogy between the physiological action of alcohol and chloroform has been quite satisfactory demonstrated by Messrs. Lallemand, Perrin, and Duroy. Like alcohol, chloroform acts first on the brain, then on the spinal system, and finally on the sympathetic; the brain exerts a certain power of concentrating within its tissue both chloroform and alcohol; the period of excitement produced by chloroform, is not unlike that of alcoholic intoxication; and insensibility equally results when a sufficient dose of alcohol or chloroform has penetrated into the circulation.

If alcoholic poisoning is positively shown to have threatening life from asphyxia owing to spasm of the glottis, I see no reason why death from chloroform should not be due occasionally to the same phenomenon.

The two other cases I have to report have come under my own observation. One of them was an instance of secondary asphyxia, from spasm of the glottis, after immersion in the Serpentine during the skating season. The patient, a middle-aged man, had been entirely under water, but on being taken out, respiration returned, and continued comparatively free until placed in a warm bath, when he suddenly exhibited alarming signs of

asphyxia, obviously from spasmodic closure of the glottis. A few minutes later the patient was removed to a bed, when several similar attacks occurred, one of them still more severe than the first. He recovered in the course of some hours.

This is an instance of spasm of the glottis produced by an accumulation of carbonic acid in the circulation. The gas in question possesses anæsthetic properties, and is so far allied to chloroform.

The third case is one of equal interest, although the subject of the observation was a dog. About two years ago, when engaged in injecting an aqueous solution of sulphuretted hydrogen into the external jugular vein of a dog, I observed that the animal's respiration, instead of becoming somewhat deeper, as usually happens during this operation, began to fail, and shortly afterwards ceased, without their being the slightest struggle or apparent symptom of asphyxia from the closure of the glottis. I immediately prepared to have recourse to artificial respiration by means of an instrument I have invented for that purpose. In order to insert a tube into the trachea, I incised this organ, when immediately, to my surprise, the animal commenced breathing through the opening. After a few minutes, free respiration and sensibility returned, and the animal recovered perfectly. It is obvious that, in the present instance, the respiration had been arrested by closure of the glottis, and the animal was dying from asphyxia; had not tracheotomy been performed, the dog would have died with every symptom of syncope. This case, which I report from memory, was witnessed by many of the pupils of the Westminster Hospital. It shows two interesting facts.

1st. That the presence of an excessive quantity of sulphuretted hydrogen in the blood may cause death from spasm of the glottis; and, 2nd. That on those occasions death takes place without the struggles or convulsions so peculiar to impeded respiration. Consequently, in cases of death from chloroform, the absence of convulsions is no proof that there exists no mechanical obstacle to the free admission of air into the lungs.

The symptoms of death by chloroform are consistent with those of asphyxia. Dr. Snow's book contains a very interesting case of death from chloroform, with symptoms of asphyxia, which was communicated by Dr. Solly to the *Medical Gazette*. This case (No 12) bears directly on the subject of the present communication. The patient, a porter, aged 48, and apparently in perfect general health, was submitted to chloroform for the removal of a toe-nail. The anæsthetic vapors were administered by means of an inhaler; after the operation had been per-

formed, and being still insensible, the patient's face became dark, his pulse small, quick, but regular, respiration laborious; his neckerchief was removed and chest exposed to fresh air from a window near to the bed, cold water was dashed on his face, the chest rubbed, and ammonia applied to the nose. After struggling for about a minute, he became still, the skin cold, pulse scarcely perceptible, and soon ceased to be felt at the wrist. Immediately on the appearance of these symptoms artificial respiration was commenced by depressing the ribs with the hands and allowing them to rise again, until the proper apparatus was brought, when respiration was kept up by means of the trachea-tube and bellows, and oxygen gas introduced into the lungs by the same means. Galvanism was also applied, but to no purpose.

Dr. Snow considers there is some obscurity about the above narrative, which I have given as nearly in the same words as those used in the report; in his opinion the symptoms exhibited would be inconsistent with death from chloroform. It appears to me, however, that this is clearly a case of asphyxia from spasm of the glottis under the influence of chloroform, and I cannot help believing that had tracheotomy been performed at the time when artificial respiration was commenced, the patient would have been saved. If most cases of death from chloroform are not attended with evident signs of asphyxia, still this is no argument in favor of the absence of spasm of the glottis, for it must be remembered that poisoning by chloroform is a complex phenomenon which results from excessive anaesthesia producing a tendency to paralysis of the muscles, and an action on the heart predisposing to death by cardiac syncope; any spasmodic closure of the glottis occurring under these circumstances would, it may be anticipated, cause sudden death without the recurrence of convulsions, or struggles for breath.

The *post mortem* appearances in cases of death from chloroform do not preclude the idea of death from asphyxia; indeed in cardiac syncope, which is according to Dr. Snow the fatal termination of poisoning by chloroform,—“If the blood have not been displaced by artificial respiration or other causes, the right cavities of the heart and the adjoining great veins will be found filled with blood, and the lungs will in many cases be more or less congested. The appearances, in short, will be very much the same as in asphyxia by privation of air which ends in a kind of cardiac syncope.” Nothing can be more in favor of the view I am advocating. It must be well understood that I do not consider every case of fatal poisoning by chloroform as owing to spasm of the glottis, and there is every reason to believe

that in some instances death takes place from paralysis of the muscles of respiration, in others from cardiac syncope, or from a simultaneous occurrence of both these effects.

If it be admitted that death from chloroform be occasionally owing to spasm of the glottis, then the importance of performing tracheotomy in these cases, and adopting some means of allowing air to enter freely through the wound, will be readily understood. It must be remembered that the cases on record of recovery from suspended animation owing to an overdose of chloroform are very few, and, as a rule, it may be considered that, after the respiration has ceased, and the pulse become hardly perceptible at the wrist, death is inevitable. Under these circumstances, any means apparently available should be adopted. The operation of tracheotomy ought to be performed as soon as possible after the respiration has stopped, and the patient assumed that livid countenance known in these cases to precede death; the loss of every second diminish the chance of saving life. Artificial respiration, if possible, must however not be neglected, and should be carried on before, during, and, if necessary, after the operation of tracheotomy has been performed. Artificial respiration is of great importance in connexion with death from chloroform, and I am at present busily engaged inquiring into this subject.—*Medical Times and Gazette, and Boston Journal.*

ON LOCAL ANÆSTHESIA FROM COLD, AND ITS APPLICABILITY TO THE SEVERER OPERATIONS.

BY JAMES ARNOTT, M.D.

The recent occurrence, within a short period, of several deaths from chloroform, has again forcibly drawn the attention of the profession to the subject of anæsthesia in surgical operations. That chloroform and other general anæsthetics will by improved modes of administration, be deprived of their dangerous properties, is a hope now scarcely entertained, as every effort to accomplish this, made during the last 14 years, has utterly failed; and the conviction has become general that it was unphilosophical, as being opposed to our former experience of analogous agencies, to expect that any means which so suddenly suspends both sensation and consciousness could be used without danger to life. The late recommendation of an American surgeon, that extreme or death-like drunkenness from alcohol should be sub-

showing the anæsthesia produced by ether and chloroform, in this account, likely to be well received.

Under these circumstances, it is natural to inquire whether the mode of producing the local insensibility by intense air congelation, which has been practised and recommended by many surgeons as a perfectly safe and effectual expedient in minor operations, cannot be modified and extended to operations involving the incision of the deeper textures; and whether the shock caused by these deep incisions, if it cannot be thus completely prevented, might not be so reduced or rendered tolerable as to make the administration of chloroform unnecessary. The principal objection which was at first made to the production of anæsthesia by cold, that it was troublesome and tedious, is now hardly worth while to notice. The trouble occasioned by mixing a little pulverized ice and salt, and applying this mixture by means of a bit of gauze for a minute or two to the skin (which is the ordinary mode of effecting congelation), has been found to be very little, and much less than what is required for the proper administration of chloroform. No previous minute examination of the heart and lungs is necessary for local anæsthesia; no assistant to watch the respiration and pulse, as well as to restrain the convulsive movements of the patient; no preparation of breathing and galvanic apparatus; for all of these, as we learn from the proceedings at coroners' inquests, are now expected by the public, and they all should be attended to and provided in order to lessen as much as possible the risk incurred.

Another objection to congelation was, that the reaction from it might interfere with the healing of the wound. But there is no reaction, in the proper sense of the term; instead of an increase there is a decrease of action as the result of congelation, and the antiphlogistic virtue proceeding from this effect is most valuable in preventing that excess of inflammation which so often prevents union by the first intention. This was strikingly shown by the different results of two operations performed on varicose veins in the Birmingham Hospital, one of which was done under anæsthesia from cold; and a list of nearly a hundred operations under congelation has been published by a London surgeon, in all but two of which the wound, when it was desired, healed by the first intention. Nor, so far as I know, has erysipelas ever succeeded an operation performed under this anæsthetic. It might, however, be otherwise if the congelation were by any means made to extend to the deeper tissues in the severer operations; for I have observed that when, in some of

its remedial uses, it has been made to penetrate deeply, a very perceptible swelling has been the consequence, which might be adverse to union by the first intention, and, at all events, it would be necessary to bear this circumstance in the mind when dressing the wound.

Sir Charles Bell, in his *Bridgewater Treatise on the Hand*, has said that the skin is exquisitely sensitive in order that it may serve as a protector or monitor to the parts underneath, which, in their normal condition, are comparatively insensible; and that it is only when the skin is cut by the surgeon that acute pain is felt. If this statement be correct (and the opinion is not confined to Sir C. Bell), it would follow that any means capable of completely suspending the sensibility of the skin would deprive the deeper operations of their terrors. This cutaneous anæsthesia can certainly and on all occasions be effected by congelation, which, in its ordinary degree, not only thoroughly benumbs the skin, but the subcutaneous tissue also. And as the healing of the operation-wound is as certainly promoted by such moderate applications of this agent, it is cruel to withhold it in those amputations which are performed without chloroform, in consequence of the patient's extreme weakness or visceral disease rendering the danger from its use greater than usual.

It is undoubtedly a great defect of congelation, that its influence, in the ordinary mode of applying it, should extend to so small a depth. Whether the danger from chloroform ought not to be reckoned a much greater defect, in comparing the two agents, is a point on which opinions will probably continue to be divided. Those, however, who insist upon the necessity of perfect anæsthesia in operations, or at least of perfect forgetfulness by the patient of his having endured pain, may conjoin with congelation such a comparatively safe dose of chloroform as will be sufficient to render the deeper-seated tissues insensible.

Other modes of producing local anæsthesia have been proposed. In a treatise on Indigestion, published in 1847, I suggested the local application of aconitine and other narcotics, but their action has been found inadequate and uncertain; and electricity, at one time so much extolled for operations on the teeth, has proved a delusion. Local anæsthesia itself has suffered in character from the disappointment caused by the failure of these and similar expedients.

Having elsewhere described minutely the various methods of producing anæsthesia by cold, whether by the application of

solids, liquids, or gases, already cooled to the requisite degree, or of bodies in a state of rapid transition from the solid to the fluid or aerial form, I shall at present limit myself to a very few remarks on this part of the subject. If sufficient pressure were combined with congelation, I have no doubt its influence would penetrate deeply enough to render amputation of the limbs perfectly painless. And this simultaneous pressure and congelation could easily be effected by enclosing a portion of the limb in a cylindrical case of gutta percha with membranous endings for tying, containing a powerful semi-fluid frigorific mixture, and having rising from it a verticle tube, in order to contain conveniently the requisite hydraulic pressure. A flat, thin, metallic bottle, filled with such a mixture, or a solid piece of brass of the same shape already cooled to below zero of Fahr., would, by being passed slowly round the limb, constitute a convenient means of congealing the skin in amputation; and it is not improbable that the principle of the new mode of making ice by the sudden evaporation of ammonia may be found applicable to the construction of a simple apparatus for remedial congelation. If a dentist were willing to incur the necessary expense of time and money, he could, in the extraction of carious teeth, or in preparing the mouth for a set of artificial teeth, benumb the alveolar process very perfectly by covering the gums with a thin metallic case made to fit with the greatest accuracy by electrotype or otherwise, through a current of freezing brine could be passed. A current brings fresh particles of the cold body in quick succession, and the same advantage is obtained when a thin metallic vessel, containing a powerful freezing mixture, is both pressed and moved upon the part.

In the above observation I have made no allusion to the question whether the results of operations are affected by the chloroform taken to render them painless. When the operation is not severe, any increase of danger that might be produced by chloroform would not be appreciable; and certainly statistics show no increase of the mortality from these operations. It is very much otherwise, however, if the operation be in itself dangerous. Every reliable and extensive statistical report of such operations shows a great increase of mortality, all other circumstances being the same, since the introduction of chloroform. Nevertheless, many lives have been saved by etherization, for many patients would not have submitted to necessary operations without its use. As a remedy, also, of strangulated hernia, it has been highly and deservedly commended, but not in terms of higher eulogy than we find old authors bestowing on the simi-

lar virtues of tobacco. It is singular that both of these remedies of hernia should have the same defect. As respects tobacco, its fatal action in some few instances has led to its abuse.—*London Lancet*.

York Street, Portman Square, June, 1862.

ON THE PATHOLOGICAL ANATOMY OF PUERPERAL FEVER.

By PROFESSOR BUHL.

Professor Buhl, of Munich, having examined the bodies of fifty women who died of puerperal fever, states that a constant and characteristic appearance is a pappy, red or dark brown or grayish-black mass lining the inner wall of the uterus, pushing forth sometimes a gangrenous and sometimes a putrid odourive smell. It is this matter which supplies the poisonous action of puerperal fever; but as to the cause of the production of the fever, differences of opinion prevail; some regarding it as the consequence of the immediate passage of poisonous matter into the womb, while others think that a preliminary poisoning of the blood by misasmata takes place, the corrupted mass being only a secondary result. Anatomically, we may distinguish two forms of puerperal fever—puerperal pyæmia and puerperal peritonitis—forms which may be clinically distinguished, as it is of importance in prognosis that they should be so.

Puerperal pyæmia does not usually prove fatal before the ninth day, and frequently not until after the third week. It is chiefly met with where the disease does not put on an epidemic form, the veins being the channel of infection: coagula, accompanied by suppuration, being found in the veins of the walls of uterus, in a pampiniform plexus or in a spermatic vein. In no instance did the author ever find both spermatic veins obstructed, and in only one case was the entire vena cava inferior filled with adherent coagula. These coagula and their subsequent caseous metamorphosis are quite sufficient to establish the existence of puerperal pyæmia, the so called metastatic abscesses being seldom met with. CEdema of the lungs and ecchymosis of the pleura were frequently met with by the author.

The puerperal peritonitis was more frequent, more violent, and more rapidly fatal than the puerperal pyæmia, inasmuch as death sometimes occurred within two days after delivery, and in but few cases was delayed to the third week. Of the 32 cases of this variety only 2 were chronic, proving fatal in the course

of six or eight weeks. In all the cases purulent exudation was found, in 18 instances occupying the tubes, and in 14 the subserous tissue of the uterus. The two conditions were found combined in only 4 instances, and a plugged condition of the veins was observed only in 5 instances. Of the 18 instances in which puerperal pyæmia occurred, in only 2 was there pus in the tubes, and in only 1 subserous effusion of pus; so that of 20 cases of tubal suppuration, in 18 peritonitis was present, and of the 14 cases of subserous suppuration peritonitis occurred in 13. On the other hand, of 23 cases of purulent coagula of the veins, in only 5 did peritonitis occur, and in all these there was subserous or tubal suppuration also, and in 16 cases in which these parts exhibited no pus, no peritonitis took place. The disease of the veins thus bore no relation to the occurrence of peritonitis. It results from these facts, that peritonitis may arise either from the immediate passage of the poisonous material from the uterus through the tubes, or from the conveyance of this from the inner wall of the uterus by the lymphatics. The supposition that the pus may have proceeded from the peritoneum into the tubes is negatived by the fact of these having been free of it in 14 cases; and the pus of the peri-uterine, subserous tissue or of the lymphatic vessels must be regarded rather as a consequence than a cause of the peritonitis, inasmuch as it was absent here in twenty instances. The prognosis is not alike in these two modes of origin of the peritonitis. That induced by the pus from the tubes is a much slighter and more simple inflammatory process, met with when there is little or no epidemic extension of the disease; while the peritonitis resulting from lymphatic absorption is a much severer form of disease, preceding or accompanying general infection, and is especially met with in the epidemic form.

In both of the principal forms of puerperal fever, besides the morbid uterine appearances there were found—1. Almost constantly swelling and watery infiltration of the retro-peritoneal, inguinal, and (though seldomer) the mesenteric glands. 2. Osteophytes on the internal surface of the cranium. 3. In several cases, especially in pyæmia and lymphatic absorption, a distention of the cortical substance of the kidney, together with the microscopical appearances corresponding to the acute stage of Bright's disease. In only two of fifty individuals was tuberculosis found.—*Froriep's Notizen*. 1861. No. 13.—*Med. Times and Gazette*.

STRYCHNIA AND MORPHIA.

Mr. John Horsley, analyst for the county of Gloucester, has lately drawn attention to an observation originally made by Dr. Lethcby, and confirmed by Dr. Reese and Professor Thomas, of Philadelphia, that morphia has the power of disguising and destroying the colored reactions by which strychnia is recognized. His investigations have led him to the discovery of a method by which the difficulty thus arising may be overcome, and also to a new test for strychnia. He writes: "I have, however, satisfied myself of another very important fact, viz., that it need not create any alarm or uneasiness in the public mind, for the difficulty in question is more apparent than real; since, in any case where both active principles are capable of extraction from a dead body, the strychnia is effectually separated from the morphia, in a form admirably fitted for identification, by adopting the following simple method, which I had the honor of submitting to the British Association for 1856, viz., to convert the strychnia into a chromic salt, by the addition to the pure and concentrated liquid of a few grains of the neutral chromate of potash, and briskly agitating the mixture with a glass stirrer, for a minute or so, when, if strychnia be present, a more or less flocculent, but crystalline precipitate, of a golden color, will separate and collect at the bottom of the vessel. In the course of a few minutes, the supernatant liquor containing the morphia (which is much longer in precipitating), must be carefully decanted. If now a drop or two of the residue containing the golden-colored strychnian salt be taken up with a pipette, and projected into a small white porcelain dish, and touched with strong sulphuric acid, the usual purple and violet-colored indications of strychnia will be most marked. In this way, a very small quantity of the poison will suffice for numerous chemical experiments, as demonstrated by me before the Chemical Section of the British Association. A similar precipitate of morphia does not react in this way, but is turned of a green color; hence, when morphia is in excess, it has the power of completely masking the colored reaction of strychnia, which, though present, remains passive and unelicited; but, by the process described, the strychnia can be easily separated from the morphia, or any other active vegetable poison with which it may be associated, when once these have been extracted from a dead body in a sufficiently palpable form. Thus much for the method of separating strychnia when present with morphia; but beautiful and delicate as is this method of detection, yet it is very far in-

ferior to a new reagent I have just discovered, viz., the nitro-prusside of sodium, which enables me to detect the 100,000th of a grain with the greatest ease! These may be considered large figures, but are arrived at thus: One grain of strychnia is first dissolved in 100 grains of water; then one drop of this solution is mixed with 999 more of water, and a fragment of the nitro-prusside of soda added. When dissolved, and well mixed by agitation, a single drop of this solution, equal to the 100.000th of the original grain of strychnia, is let fall into a small white ware dish, and, after evaporation to dryness over a steam bath, is fit for the development of the characteristic color, by merely drawing a glass rod dipped in sulphuric acid across the spot. The 3000th part only, with the best experiment, being the limit of the ordinary process, the new test, therefore, exceeds the old by 97,000 times the intensity; in other words, it is about 30 times more delicate."—*Med. Times and Gaz.*, June 28, 1862.

HEALTH OF THE BRITISH ARMY AND NAVY COMPARED TOGETHER.

Dr. Milroy read a paper on this subject before the Social Science Congress at its recent meeting. It contained the following startling facts in reference to the two services: In the army, in 1859, in the United Kingdom, the annual death-rate was 8.4 in 1000; in the Mediterranean it was 13; in the West Indies, 17; in the Australian colonies, 10; and in Ceylon and China, 47.1. The death-rate in the navy was as follows for the year 1858: On the home station, 9.6; Mediterranean, 11.1; West Indian, 20.8; Australian, 7.9; and East Indian and China, 62.5. The daily sick-rate in the army was as follows: United Kingdom, 50 in 1000; Mediterranean 48; West Indies, 53.5; Australian colonies, 27; Ceylon and China, 99.5. The daily sick-rate in the navy was: Home station, 53.5; Mediterranean, 48.7; West Indian, 66.6; Australian colonies, 42; and East Indies and China, 92.

A discussion ensued upon this paper in which Mr. J. N. Redcliffe said it was worthy of notice that Lord Clarence Paget in moving the navy estimates, had stated that a large amount of the mortality and sickness in ships was believed to be traceable to the want of proper ventilation between decks; but was not aware that the ventilation of iron-plated ships had been brought under the notice of the parliament committee which had been appointed to consider the subject. The iron-plating of ships shut out the means of ventilation, and the temperature between the

decks of the *Warrior* was much higher than in any of the other war ships of the navy now in use. He understood that the Government had directed that seventy tons of solid brickwork should be placed on the bottom of the ship to keep out the bilge-water, but whether or not it was to be cemented he did not know. At the same time he must say that, when this brick-work should become impregnated with bilge-water, the evils would be greatly aggravated. Therefore, what the condition of the iron-plated ships now building would be could be readily conceived, and he thought it was urgently required that the attention of the Government should be drawn to the ventilation of the *Warrior*, *Black Prince*, *Defence*, and the other iron-plated ships now building, or the mortality might prove much greater than it was at the present time.—*Dublin Medical Journal*, June 25, 1862.

Book Notices.

HEALTH: ITS FRIENDS AND ITS FOES. By R. D. MUSSEY, M.D., LL.D., late Professor of Anatomy and Surgery at Dartmouth College, N.H., and of Surgery in the Medical College of Ohio; Fellow of the American Academy of Arts and Sciences, etc., etc. Boston: GOULD & LINCOLN. 1862.

This is a neatly printed volume of 368 pages, embracing the consideration of a variety of interesting and important topics.

The author is one of the oldest and most eminent of the living members of our profession; and, though he has written more directly for the benefit of the public at large, yet every physician will find himself amply remunerated for the time spent in a perusal of the work.

It is, in fact, a very valuable work on personal hygiene; embodying the personal experience and extended observations of one of the most erudite men of our time, on the following subjects:—The Corset—Clothing—Boots and Shoes.

Ventilation—Light—Sleep—Exercise—Bathing.

Alcohol—Its Effects in Health and Disease.

Tobacco—Its Influence upon Life and Health.

Tea and Coffee.

Casper Hauser.

Organic Sympathies.

Man by Nature a Vegetable Eater.

Diseases of the Teeth, and of Wild Animals.

Man Omnivorous by Practice—Gluttony, etc.

Quantity of Food—Economy of Vegetable Diet, etc.

Vegetable Food Sufficient for Man—Moral and Intellectual Effects of Vegetable Diet, etc.

Objections to Vegetarianism—Cherokees, etc.

Vegetable Diet—Illustrative Cases.

Injudicious Diet and Disease—Cases.

Vegetable Diet as a Remedy—Cases.

Ophthalmia—Deaths from Eating—Distillery-fed Pork—Intemperance in Eating and Drinking.

Apoplexy—Palsy—Epilepsy.

Epilepsy—Dyspepsia.

Constipation—Colds.

Blood Poisoning—Parasites.

My Own Experience.

Milk and Vegetable Feeding for Surgical Operations.

Length of Life.

All these subjects are discussed in a plain, but chaste and pleasing style.

We cordially commend the work to the public and the profession.

A PRACTICAL TREATISE ON THE DISEASES OF THE THROAT AND GREAT VESSELS, Including the Principles of Physical Diagnosis. By WALTER HAYLE WALSHE, M.D., Fellow of the Royal College of Physicians; Professor of the Principles and Practice of Medicine, and of Clinical Medicine, University College, London; Physician to University College Hospital; Consulting Physician to the Hospital for Consumption. A new American, from the Third Revised and much Enlarged London Edition. Philadelphia: BLANCHARD & LEA. 1862.

The former editions of this work have been long enough before the Profession, for their merits to be fully appreciated. The present edition has been thoroughly revised by the author, and is much enlarged, containing 420 royal octavo pages. It is undoubtedly the best work on the diseases of the throat and great vessels, which is accessible to the profession.

For sale by W. B. Keen & Co., Lake Street, Chicago.

CAUSES AND CURE OF DISEASES OF THE FEET: With Practical Suggestions as to their Clothing. By C. H. CLEVELAND, M.D. Cincinnati: Printed by BRADLEY & WEBB. 1862.

This is an unbound monograph of 111 pages, consisting mainly of the re-publication of articles originally appearing in the *Cincinnati Journal of Rational Medicine*. From a hasty examination, we think it a well written and judicious practical treatise on the diseases of the feet; many of which are troublesome and difficult to cure.

COMMUNICATIONS OF THE RHODE ISLAND MEDICAL SOCIETY, FOR THE YEAR 1862. Published by the SOCIETY. Providence: COOK AND DANIELS, Printers.

This pamphlet contains the record of proceedings of the Rhode Island Medical Society, and the communications made to it, for the year ending June 4, 1862. The most important of these communications is an interesting address on "Hereditary Transmission," by B. LINCOLN RAY, M.D., though all of them are worthy of a careful perusal.

Editorial.

CHICAGO MEDICAL SOCIETY.—OVARİOTOMY.—DISEASES AT CAMP DOUGLAS.—CAMP DYSENTERY, &c.—The Chicago Medical Society held its regular monthly meeting in Larmon's block, September 5, 1862. The President, Dr. S. WICKERSHAM, was in the Chair, and a goodly number of the members were in attendance. Among the items of interest presented to the meeting we note the following:—

OVARİOTOMY.—Dr. A. FISHER presented an ovarian tumor, consisting of a single cyst of considerable size, and a solid part weighing about three pounds. The cyst had contained about sixty-four ounces of fluid. No part of the tumor exhibited any of the appearances of a cancerous or malignant structure, but the solid part evidently belonged to the class of simple fibrous

growths. The patient from whom it had been removed was a married woman, 47 years of age, good constitution, and had borne four children. A small tumor was first felt in the right ileac region about one year since. In a short time it seemed to disappear from that side, and another made its appearance in the corresponding region of the left side, where it remained, and increased steadily until removed by the operation.

At the time the patient came under Dr. FISHER's care for an operation, the abdomen was much distended with fluid, a great part of which was evidently in the cavity of the peritoneum. The tumor, however, was well defined, and very movable in all directions, showing the probable entire absence of adhesions. This, with the rapidity of its growth, and good constitution and health of the patient, caused the operation to be recommended without hesitation. The patient assenting, the operation was performed by Dr. FISHER, in the presence of Drs. MYERS, ALLEN, WICKERSHAM, and others.

On opening the peritoneum, about two gallons of water escaped from the cavity. The incision was then enlarged, the sac of the tumor punctured and relieved of two quarts of a serous fluid. The whole tumor was then found to be free from adhesions, and was readily drawn through the opening. A ligature was placed firmly around its root or pedicle, and the tumor excised.

The operation was finished by closing the wound with sutures which passed through the integument and the pedicle, so as to retain the latter at the surface.

Two grains of opium were administered and the patient placed in bed. No bad symptoms followed, and the patient recovered perfectly in a few weeks.

DISEASE IN CAMP DOUGLAS.—Dr. M. O. HEYDOCK, one of the assistant-physicians to the camp-hospitals, in which are a large number of rebel prisoners, made an interesting report in relation to the diseases that had been most prevalent among them during the past summer. Pneumonia, which had been so prevalent and fatal during the early Spring, had not entirely disappeared during the Summer, but was not of frequent occurrence.

The diseases most prevalent, among the prisoners, during the past three months, have been diarrhœa, dysentery, erysipelas, fevers, and dropsy. Erysipelas had been very prevalent, attacking almost every part of the cutaneous surface, in different cases, and presenting every degree of severity. It had been most successfully treated, by nutritious diet, and the internal use of from 20 to 40 drop doses of muriated tincture of iron, sometimes aided by quinine and opiates.

Most of the cases of fever, were of the continued or typhoid type. A few had seemed to possess an extreme degree of malignancy, running to a fatal termination in from 20 to 72 hours.

These rapidly fatal cases did not present the symptoms that usually characterize pernicious fever of a malarious origin. The patients had usually felt slightly indisposed for two or three days previous to the attack; when they would suddenly become overwhelmed with exhaustion, and on being brought into the hospital were found with face suffused with a dark flush, eyes injected, lips leaden color, the capillaries of the cutaneous surface generally congested, and the extremities cold. The pulse small, soft, and weak; respiration sometimes hurried, and at others slow and sighing; general restlessness; and dulness of mental faculties. In many cases the tongue was perfectly clean, and no evacuations, either by mouth or rectum, and little or no secretion of urine. In some cases the patients complained of very severe pain or distress, generally in the epigastric and hypochondriac regions, though sometimes in the head and back. The circulation became rapidly more feeble, the respiration less efficient, the coldness more general, a cold sweat appeared on the surface, and death occurred, in some cases, within twelve hours, and in others, not until the end of the third day. The appearance, on making *post mortem* examinations, were, general venous congestions or fulness of the venous capillaries, and the dark color and uncoagulated condition of the blood. The latter were constant appearances; the blood in large vessels and cavities of the heart being always dark, venous color, and entirely free of any coagula. The muscular structure of the heart was darker color and softer than natural. The liver was moderately en-

larged in most cases, and its central portions decidedly softened, with points of black blood starting out from the surface whenever it was cut through. The spleen was generally found altered in the same direction, though not to the same extent as the liver. The lower and posterior portions of the lungs were usually moderately engorged with dark blood. No marked lesions in the intestines. The bladder was usually found empty, and the kidneys normal in size and only moderately congested with blood. Their structure appeared slightly softened, and the investing membrane more easily peeled off than natural. Neither the brain or spinal cord were examined in any of the cases. Neither did Dr. HEYDOCK make any mention of the appearances of the ganglia of the sympathetic nerve.

From the symptoms during life, and the appearances of the blood, as well as the general tendency to softening of structures, revealed by the *post mortem* examinations, we should regard these cases as belonging to the class of malignant typhus.

Both the predisposing and exciting causes were such as would be likely to engender this variety of fever.

Confinement for several months, as prisoners closely within the camp; a limited *variety* of food; and more or less mental depression, were well calculated to depress the vital properties, impoverish the blood, and enfeeble all the organic movements.

The system brought to this condition by such causes, and then exposed to the hot, sultry, and damp atmosphere of many of our summer days, was well calculated to so far suspend the vital affinity of one organic atom for another as to arrest organic change, and consequently both capillary circulation, secretion, and the evolution of caloric. Of course, such a condition leaves scarcely an available degree of susceptibility to the action remedies of any kind, or a capacity for reaction, and consequently the patients almost uniformly die in from half-a-day to three days from the commencement of the attack.

Dr. HEYDOCK told us that many remedies had been tried, chiefly belonging to the class of diffusible stimulants, though quinine had also been faithfully tried, in every variety of dose, from the smallest to the largest, but without any apparent effect

whatever. He thought large doses of muriated tincture of iron, given as in the treatment of erysipelas, and aided by diffusable stimulants, had more effect than any other remedies tried.—Query: Would not the sudden application of cold effusions, alternated with warm dry flannel to the surface, and the liberal internal use of the chlorate of potassa or soda, in addition to the tincture of the chloride of iron, be more effectual in reviving the almost suspended susceptibility and vital affinity in such cases, and thereby establish a reliable reaction, than the means generally resorted to?

Diarrhœa and Dysentery.—Dr. HEYDOCK stated that the cases of diarrhœa and dysentery were numerous; generally persistent, with a tendency to continue in a chronic form, accompanied by an extremely anemic condition of the blood, and frequently dropsical effusions. The symptoms of the more recent cases of dysentery differed from those usually presented, chiefly in there being less heat of skin, more palor, and a remarkable clean tongue, but little disposition to become either dry or red. This clean and rather pale appearance of the tongue and gums continued throughout the whole course of the disease, even in its most chronic form.

The *post mortem* appearances, observed in those who had died after a protracted course of the disease, were highly interesting. The adipose and muscular structures were in a state of extreme atrophy; even the heart itself was found much smaller than natural and of a paler color.

Serous effusions were found in most cases, and in some they existed in almost every cavity or serous sac in the body. But while the cavity of the peritoneum, pleura, pericardium, etc., were often found more or less distended with serous fluid, the presence of plastic exudations, adhesions, or any other traces of inflammation were very rarely observed. Purple or petechial spots were often found on that part of the peritoneum covering the colon and lower part of the ileum, and the usual appearances of redness, tumefaction, softening and ulceration in the mucous lining of the same portions of the alimentary canal, were uniformly present, to a greater or less extent.

Among a large variety of remedies used in the treatment of chronic cases, Dr. HEYDOCK found the combination of alum and opium more efficient than any other in arresting the discharges. We have occasionally used alum in cases of dysentery, occurring in anemic subjects, for several years past, and generally with prompt benefit. In some cases, of protracted duration, in soldiers and officers returned from the army, during the present summer, a powder of alum, 5 grs., and opii. from 1 to 2 grs., given every six hours, with 15 drops of the liquor ferri nitratis between, has speedily overcome the disease.

In other cases, we have used the emulsion of oil of turpentine and laudanum every two, three, or four hours, according to the frequency of the discharges, and a pretty full dose of tannate of quinine every morning, with perfectly satisfactory results.

In some of this class of cases, in which there seems to be great relaxation of tissues, as well as impoverishment of the blood, the following formula has been productive of much good:

R $\bar{y}$.—Strychnia,..... 1 gr.
Nitric Acid, 5j.
Tinct. Opii,..... 5ij.
Water, 5ij.

Mix, and give to an adult, a fluid drachm every 4 or 6 hours, diluted with sweetened water.

PROSPECTS OF OUR MEDICAL SCHOOLS.—Our readers will be glad to know that the prospect of having a full class of students in attendance at the opening of the annual winter term, in the Medical Department of Lind University, is good; and all the arrangements are completed for having the instruction in each department full and complete. The dissecting room will be open, and material supplied for dissection, on or before the 1st of October; and the same liberal clinical advantages afforded as in former years.

There will be four hospital and two dispensary clinics each week, thus affording to the advanced students one hour of direct clinical instruction at the bedside of the sick every day.

The regular winter term commences on the second Monday in October, and continues until the first Monday in March.

The Rush Medical College commences its regular course on the 1st of October, and continues sixteen weeks.

Of the detailed arrangements for the term, and the prospects in reference to the number expected to attend, we are not informed, but presume both are substantially the same as in former years.

TREATMENT OF EPILEPSY.—Dr. John W. Ogle, assistant-physician to St. George Hospital, London, has an article in the September number of the *London Lancet*, calling attention to a species of the *galium* as a remedy for the cure of Epilepsy.

It seems that there has been, for several years past, an establishment at Tain, in the South of France, at which large numbers of Epileptic patients are treated annually, and with much reputed success. Almost the only medicine used is the expressed juice of a species of the *galium*. Dr. Ogle calls it the *galium alba*.

From the observations made by Dr. Ogle, and the testimony of others, it would appear that the remedy is worthy of further trial.

OBSERVATIONS ON THE EFFECT OF THE PREPARATIONS OF IRON.

TRANSLATED FROM THE GERMAN

By D. S. GANS, M.D., Cincinnati, Ohio.

Dr. Pakrowsky, of St. Petersburg, had opportunity to observe several patients in the hospital there, who, for various diseases, took iron; and he directed his particular attention to the effect of that remedy on the tissue-change. To that end he measured daily in all the patients the temperature of the body, the quantity of the consumed food, the quantity of the excrements; of the urine, the specific gravity of the same, and the quantity of the chlorides and urea in the same.

After giving the histories of the cases, he comes to the following conclusions:

1. The temperature of the body is positively heightened by the use of these preparations.

2. This increase results in some cases very soon; in one case it occurred after five hours; in others slower, and in one case after a long interval and after a large dose.

3. The temperature, the morbidly lowered as well as normal one, is increased; and if it ceases to rise after reaching a certain height, having taken a certain quantity of the iron, the temperature will rise more by increase of the dose.

4. Several days after using it the pulse rises also, although not in all cases.

5. Very soon, and consequent upon the increase of the temperature, the daily amount of urea in the urine increases.

6. The use of iron increases the weight of the body.

7. Every preparation of iron produces the same effect, and a change in the different preparations in the same patient does not alter the result.

8. The diuretic effect of citrate of iron was very distinct in two cases, but was wanting in three under the same conditions.

9. In all cases where iron was used no constipation of the bowels took place, except a slight one after iodide and lactate of iron. It was borne well, and in large doses, by the digestive apparatus (nine grains pyrophosphate of iron, and fifteen grains *ferrum hydragenio reductum*).

10. Dropsical transudations in the subcutaneous cellular tissue were resorbed by the use of iron, even in patients with insufficiency of the mitral valve, and reappeared after stopping with the remedy.

11. The increase of the heart's impulse and the dyspnoea in patients with organic cardiac diseases disappeared even in cases in which digitalis had done nothing.

12. After the normal temperature of the body had been raised by the use of iron, it lasted a considerable time after stopping with its use before returning to its normal condition; whilst the morbid lowered temperature rose quickly by the use of iron, it fell just as quickly by stopping with its use—at least, with the other pathological symptoms continued, and where consequently the cause of the low temperature was not cured.

Referring to these facts, the Doctor lays down the following maxims: Taking into consideration that the temperature of the body and the quantity of urea in the urine is increased by the use of iron, that the oedematous condition disappears and the weight of the body is augmented, we are fully justified in ascribing to the iron a nutritive power. The increase of temperature indicates a

stronger tissue-change, for this is constant, and accompanied by other symptoms indicating a heightened nutrition. How this is brought about it is difficult to say. Increase of the blood quantum or of the blood corpuscles can not be the cause; both increase very slowly, whilst the change of tissue augments very quickly. Neither can the increase of the pulse explain the elevated temperature, as the first succeeds the latter. The respiration is not altered by the iron, hence can not have an influence upon the temperature.

According to Dr. Pakrowsky, we have, therefore, to look for the effect of iron in the finest arterial and capillary system, one of the most important places of nutrition, and the growth of the tissue and organs, and so much more, as the disappearance of dropsical transudations in the subcutaneous cellular tissue after the use of iron, points to that system. The most probable is the supposition that the iron acts upon the contractile elements of the finest arterial branches, which must have, without doubt, a high and important influence upon the capillary circulation, and, namely, upon the degree of the tonics, *i.e.*, the degree of tension of the walls of these ramifications. The iron must consequently alter the conditions of the diffusion of the elements composing the tissue and organs. Only in this way does it seem possible to explain the quick effect of iron upon nutrition and the resorption and the oedematous transudations.—*Virchow's Archiv.* xxii. 1862; *Cincinnati Lancet and Observer*.

OVARIOTOMY IN PARIS.—Prof. Nelaton has just performed the operation of ovariectomy, on a woman of twenty-six, who had been ill only one year, but with whom the accumulation of water was so rapid that she was tapped in May last. The cyst filled again in a short time, and M. Nelaton removed the whole growth on the 17th June. After the incision of the abdominal walls, the cyst was seized with blunt forceps and tapped. When quite emptied, it was found to adhere to a portion of omentum, which latter was cut, a small portion of it remaining attached to the cyst. The latter was connected with the uterus by a very narrow pedicle, which was seized with a peculiar instrument and divided. Three small omental arteries were tied, and the wound closed by six metallic sutures. Some blood had trickled into the abdomen, and as M. Nelaton considered that it might decompose, and be of great prejudice, he removed it from the cul-de-sac between the uterus and rectum by means of a sponge twice the size of a fist. The cyst was multilocular, and contained about eight quarts of viscous stringy liquid. The patient was

operated on in a county house near Paris, and was in a very favorable state a week after the operation. We must not omit to state that, on the 2d of June last, Mr. Kæberle, deputy professor at the Faculty of Medicine at Strasburg, performed the operation of ovariectomy on a woman of 26 years. The diameter of the cyst was from nine to ten inches; and we are glad to say that on the 20th of June, the patient was doing extremely well, and likely to make a good recovery.—*London Lancet*.

PERCHLORIDE OF IRON AND INGROWING TOE-NAIL.—Dr. J. F. Miner corroborated before the Buffalo Medical Association the efficacy of this treatment. A few grains introduced by the side of the nail, between the free edge and the ulcer, was the most pleasant and efficient treatment he had ever seen adopted. He had used it in several mild cases with the greatest satisfaction; thought possibly it was better adapted to the early stages of the complaint, or to the milder degrees of irritation, inflammation or ulceration. One application was generally sufficient, when, in a few days, the condensed tissue might be removed, or, if allowed to remain, was productive of no injury; it would eventually separate, leaving a healthy surface.—*Buffalo Medical and Surgical Journal and Reporter*.

OZONE CORRECTIVE OF MIASMATA.—Dr. Wood gives a very important fact relative to miasmata: "These effluvia are neutralized, decomposed, or in some other way rendered innocuous by the air of large cities. Though malarious diseases may rage around a city, and even invade the outskirts, yet they are unable to penetrate the interior; and individuals who never leave the thickly built parts, almost always escape." This he attributes to the evolution of the ethereal oils, in the combustion of wood and coal, by which a large proportion of ozone is produced.—*London Lancet*.

CURE OF VERICOSE VEINS.—Dr. J. F. Miner relates three cases in which he effected a complete cure, by injecting into the internal saphena a solution of the persulphate of iron, two drops, diluted with eight drops of water, thus obliterating the vein. Phlebitis has never followed this operation, the pain is less than usually attends the ligature, and the recovery is more rapid.—*Buffalo Med. and Surg. Journal and Reporter*.

PHARMACEUTIC GRANULES AND DRAGEES,

SUGAR-COATED PILLS

OF

GARNIER, LAMOUREUX & CO.

MEMBERS OF THE COLLEGE OF PHARMACY, OF PARIS.

These Granules and Dragees are recognised, both in Europe and in the United States, as the most reliable way of dispensing valuable medicines. Physicians will find many worthless imitations, and they must be careful to see that the Pills dispensed by the Druggist are made by Messrs. GARNIER, LAMOUREUX & Co., Members of the College of Pharmacy, Paris. The following are some of the principal preparations:

DRAGEES.

	U.S.P.		U.S.P.
Aloes and Myrrh.....	4 grains.	Cynoglosse	1 grain.
Compound Cathartic.....	3 "	Quevenne's Iron, reduced by Hy-	
"	1½ "	drogen.....	1 "
Aloetic.....	4 "	Proto-Iodide of Iron.....	1 "
Assafetida.....	4 "	Lactate of Iron.....	1 "
Aloes and Assafetida.....	4 "	Sulphate of Quinine.....	1 and 2 "
Dinner, Lady Webster's.....	3 "	Valerianate of Quinine.....	1 "
Comp. Calomel, Plummer's.....	3 "	" Zinc.....	1 "
Blue Pills.....	3 "	" Iron.....	1 "
Opium Pills.....	1 "	Citrate of Iron and Quinine.....	2 "
Calomel Pills.....	2 "	" Iron.....	2 "
Opium et acet. Plumb, each.....	1 "	Willow Charcoal.....	2 "
Extract of Rhatany.....	2 "	Diascordium.....	2 "
Compound Rhubarb.....	3 "	Anderson's Anti-bilious and Purga-	
Compound Colocynth.....	3 "	tive.....	2 "
Compound Squills.....	4 "	Extract of Genitan.....	2 "
Dover Powders.....	3 "	Iodide of Potassium.....	2 "
Carbonate Iron, Vallet's formula...		Calcined Magnesia.....	2 "
Carbonate of Manganese and Iron.		Rhubarb	2 "
Kermes.....	1-5 "	Ergot, powder covered with sugar	
Santonine.....	½ "	as soon as pulverized.....	2 "
Bi-Carbonate of Soda.....	4 "	Phellandria Seed.....	2 "
Magnesia and Rhubarb, each.....	1 "	Washed Sulphur	2 "
Megliu.....	1 "	Sub-Nitrate of Bismuth.....	2 "
		Tartrate of Potassa and Iron.....	2 "

GRANULES.

Of 1-50 of a grain each.

Aconitine,	Arsenious Acid,	Atropine,	Digitaline,
Morphine,	Strychnine,	Valerianate of Atropine,	Valtrateine.

Of 1-5 of a grain each.

Tartar Emetic,	Codeine,	Conicine,
Extract of Belladonna,	Extract of Hyosciamus,	Extract of Ipecac,
" Opium,	Proto-Iodide of Murexy.	

Lupuline.....	½ grain.	Extract Rad. Aconite.....	¼ grain.
Extract Nux Vomica.....	½ "	Emetine.....	½ "
Veratrine.....	1-24 "	Iodide of Mercury.....	½ "
Sulphate of Morphine.....	½ "	Valerianate Morphine.....	½ "
Corrosive Sublimate.....	1-12 "	Acetate Morphine.....	½ "
Nitrate of Silver.....	¼ "	Digitaline.....	1-24 "
Extract of Hyosciamus.....	½ "	Strychnine.....	1-12 "

Colchicum (each granule equal to two drops of tincture.)

DRAGEES.

Copaiba, pure solidified,	Copaiba and Cubebs,	Copabia, Cubebs and Citrate Iron,
Cubebs, pure,	Cubebs and Alum,	Cubebs, Rhatany and Iron.

To be had at the principal Druggists.

Sole Agent For United States,

F. A. REICHARD,

60 John Street, New York.

THE
CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XXVI.

A CASE OF MASTURBATION, WITH REMARKS.

By E. H. NEYMAN, M.D., Cedar Bluffs, Iowa.

I was recently called to see a patient, aged 20; found him sitting up, complaining of no other symptom than weakness, especially of the lower extremities. The closest questioning failed to elicit any other symptom. Pulse slow and languid; tongue moist and clean; respiration regular. The case puzzled me; but from a peculiar expression of his face, his inability to look me full in the face, and unsteady gait, I was lead to suspect that he was a victim of that prolific cause of evil, torture, and misery—masturbation. Victims of this habit, wishing to conceal it, answer incorrectly questions which they suppose may excite suspicion. From notes on the careful and minute examination of several cases of self-pollution, furnished me by my preceptor and *pater*, E. M. C. NEYMAN, I was convinced of the existance of a diagnostic sign, which from the remoteness of its situation, and the inability of the patient to discover the relation between it and his pernicious habit, would be stated without reserve or contortion. There exists, in all cases I have met, or those recorded by my father, a chronic inflammation of the testes which not only produces pain in these parts, but also a pain during violent exercise, as horseback riding, referable by the patient to

the region of the external abdominal ring. I questioned my patient, indicating the region by digital pressure, ascertaining this fact, and then flatly accused him of onanism. At first he attempted to deny it, but I positively reiterated what I had said. He then confessed that he was a votary of this solitary vice; that he felt its sad influences, and at times would try to shake off the monster, but that it held him with a giant's force, his resolves at self-reform being as ropes of sand. The parents of this young man were very solicitous about his health, attributing all the difficulty to consumption. By a physical exploration of the chest, I found unmistakable evidences of phthisis pulmonalis. No hereditary predisposition could be traced. It will be remembered that BARTHEZ & RILLIET. (*Diseases of Children*.) place this vice in the ætiology of tuberculosis. This instance is but one of many. The vice of self-pollution is more frequent than usually imagined, numbering among its victims many of our intelligent youth. One-tenth would not be more than a fair average in the male. Of the female I am not prepared to speak positively. The effects of self-abuse are manifold and distressing, among which may be named the following: mental imbecility, nay idiocy, an awkward and irregular walk, unmanliness in the appearance, restless vision, deafness, premature gray hair, general weakness, hypochondria, impotence, decay of the spine, loss of memory, vertigo, and epilepsy. Dr. B. WOODWARD, of Galesburg, Ill., relates a case of interruption of the heart's action from this cause. (*Chicago Med. Examiner*, Vol. I., No. 3.) The pulse sank to 28, and the respiration to 5, per minute. Auscultation revealed no organic disease of the thoracic viscera. This prostrated anemic condition was sudden. As a cause of tuberculosis the authority, BARTHEZ and RILLIET have already been cited. Mr. KANE attributes some forms of night blindness to self-abuse. It is he, too, I believe, that places amaurosis as one of its sequela. MARJOLIN states, that children with a certain disease of the spinal cord, known as "Potts' disease," are usually masturbates, but whether it is a cause or an effect, he is not prepared to say. The same opinion is held by Mr. JOHNSON. If there is really any connection between the two conditions I am inclined to the con-

clusion, from observations on the adult, that it is but one of the many effects of onanism. The Reports of the Massachusetts Lunatic Asylum, give a percentage as high as 32 in 100, as a cause of insanity. Dr. CHIPLEY, medical superintendent of the Eastern Insane Asylum, located at Lexington, Ky., in a little work, entitled "A Frightful Cause of Insanity," &c., thinks even this frightful percentage too small. GUISLAIN affirms that mental alienation, coming on without any manifest reason, has usually, in young persons, masturbation for a cause. Dr. CHIPLEY enumerates dyspepsia and drunkenness among the effects. I remember of seeing, while a student of medicine, a patient who complained of continuous and distressing tinnitus aurium and phantasmascopia; stysis was impossible, the nearest approach to plenary styrna, being only semi-erection. In this disease, while the mind is impaired, the imagination is unbridled, which pencils pictures, gross, lascivious, and beastly. Nature becomes demoralized, and the victim left incapable of one pure sentiment.

Another curious, interesting, and important fact, is the early age at which this disease may be contracted. We have good authority (MARJOLIN), that even infants at the breast, fall into the habit. Dr. VAN BAMBEKE relates, in the "*Union Medicale*," three cases in children between the ages of ten and twenty months. A. A. W. JOHNSON, F.R.S., to whom I am indebted for much valuable matter in this paper, relates an instructive case, which came under his own observation. The patient, aged about six, commenced ailing when about two years and ten months old. He became weak and ailing, without any definite malady. Slight improvement, with frequent relapses were experienced upon the administration of tonics. Finally, deafness complicated the other symptoms; the child, instead of presenting the appearance of a healthy child, became to all appearance a little dried up old man, (*vide London Lancet*.) This was first contracted by sleeping with a young girl, 14 or 15 years of age. BARTHEZ and RILLIET, in their admirable work before referred to, say, "It is often very young children that abandon themselves to it with a fury." M. MARJOLIN observed the same thing in the Hospital des Enfants Malades, (*vide Report in the Gazette*

des Hospitaux.) FOURNIER and BEGIN relate the case of a little girl, who died in a state of woful marasmus. ZIMMERMAN also refers to the frequency of the disease.

An author, writing on this subject, says that during the paroxysm, the face becomes flushed and moist, the child oblivious, its position reclining, and eyes unusually brilliant. After the act, there follows exhaustion, non-inclination to play, pale livid face, and a dull, expressionless eye. These remarks particularize infants. I was told by a victim of self-pollution, that during one winter, she had a sparse allowance of bed clothing, and would often wake up benumbed with cold, on such occasions, she would often send the warm blood gushing through its vessels, and warming her benumbed extremities by performing the act. She would then sink to sleep. The exercise of the generative organs at a very early period, will hasten their development. Thus in Mr. JOHNSON'S patient, there were emissions; and in one of Dr. VAN BAMBEKE'S cases, a little girl, in which the periods of excitement were very frequent, a considerable development of the erectile organs existed.

Mr. JOHNSON states that it is not absolutely necessary that the patient use his hand, but that he may effect his purpose by a "peculiar convulsive or instinctive movement of the thighs." The same author concludes that the evil consequences of infancy are greater than to adolescence or maturity. This stands to reason: the nervous system being highly excitable in infancy, will take recognizance of impression sooner than the less excitable adult. While in adults the organs and faculties being forward, it can only impair; in the child, these being only forming, it both impairs and stagnates. In proof of the greater susceptibility of children, might be adduced the fact that even adolescence falls a victim to over-legitimate sexual indulgence much sooner than maturity.

Our next inquiry would be into the causes of the habit. LALLEMAND, in his elaborate work, has a long category of causes. Dr. CHIPLY'S chapter of causes embody the same. None are more prominent than the vicious and imprudent acts of attendants and associates. Especially should care be used in placing

young male infants to sleep with young girls. It will be remembered that Mr. JOHNSON's patient contracted the disease by sleeping with a female attendant. In the same paper, he gives an illustration, the instance of a boy aged seven, who was treated by him, in the Children's Hospital, for gonorrhœa and buboes, contracted apparently while sleeping with a servant girl. The predisposing cause, Mr. JOHNSON seems to think, is the excitability of the nervous system during early life. Potts' disease has already been alluded to. Dr. VAN BAMBEKE seems to think that during dentition, where there exists an increased nervous excitability, it is frequently a cause. In males, the secretion of the *glandul odoriferi Tysoni* becomes lodged in the *fossa glandis*, behind the *corona*, producing *pruritis*, leading to onanism. Dr. CHURCHILL, in his work on Diseases of Women, gives *pruritis* of vulva as a cause of self-abuse, and consequently, indirectly, anything that will produce this, whether the aphthous inflammation of DEWEES' (Diseases of Fem., p. 47,) disease of the membranous lining of the womb, of BLUNDELL, (Diseases of Woman,) superabundance of hair on external genitals, of DAVIS' (*vide Obst. Med.* Vol. I.) diabetes, of WEST, (Sec. Dis. of Fem.) lichen, prurigo and eczema, of FOURNIER, (*L'Union Medicale*, 1851,) *ascaris virmicularis in rectum*, circumscribed inflammation of vulva, or the accumulated acrid secretion of the sebaceous glands. Dr. DAVIS, in his work on Obstetric Medicine, gives enlarged clitoris as a cause. LALLEMAND, among other things, enumerates late rising, feather beds, diseases of bladder, and elongated prepuce. In reference to the latter, Dr. COPLAND says: "The neglect of circumcision, in Christian countries, is certainly no mean physical cause of the prevalence of this vice, and of the many consequences which follow." I think I may venture on the assertion, that in adult females, inflammation and ulceration of the mouth of the uterus, is sometimes a cause. Sometimes the means we employ, expecting to do the greatest good, are instruments of death; as, for instance, one patient told me that he first contracted the vice by reading a book, cautioning him against it. He said the author portrayed, in such emphatic terms, the impossibility of resisting the desire, that he naturally concluded that

the pleasure must be very great. He thought he would try it once, "to see how it would feel." The result was, he became a confirmed masturbator. These remarks apply equally well to opium eating; I know one physician, an opium eater, who contracted the habit by the emulative desire of witnessing the effect of medicines upon his own person. Popular medical education is a humbug. This is the only objection I have to Dr. CHIPLY'S otherwise admirable little volume.

It is often important that we should be able to diagnose these cases beyond cavil. In youth and adults too much importance cannot be attached to the pain referred by the patient to the external abdominal ring. In connection with the blushing, unmanly awkwardness, and unsteady gait and vision, it is almost certain. Where melancholy alternates with sudden and unexplained exuberance of mirthfulness; or imbecility with good cranial conformation, suspicion should be aroused. I have found, or imagined I have found, an unusual prominence of the os pubes, from a superabundance of adipose tissue. This, together with frequent erection, causes an unseemly prominence of the parts in the region of the genitals. This may form a valuable co-index in connection with other indices. There is also, usually, a pimple on the face, the gutta rosea, very characteristic. I never see continual successive crops of these, especially in the male, but what my suspicions are aroused. In young infants, there is usually no tendency to hide it, but it is unblushingly performed. In older children, Dr. DONNE'S test may be used. This gives chrystals of the oxalate of lime, upon an analysis of the urine. Especial care should be observed, in all our examinations, that we may not learn the object of our scrutiny the vice, if he has not already contracted it. In any thing like young children, "moral suasion" will prove futile, for no child, in consideration of all the suffering, in the future, you may be able to picture to the youthful mind, will surrender a present pleasure.

The causes, symptoms, and diagnosis having been given in detail, the most vague and unsubstantial part yet remains to be spoken of; namely, the treatment. It is here that the physician, in disease, has too often to stop in his investigation, unable to go

farther, to accomplish which, all the rest were but subsidiary. The top round in the ladder is missing, all the previous ascent is useless, for the grand object—a cure—has not been effected. Thus the pathologist may successively trace the symptoms, causes, diagnosis, and pathological anatomy of chronic hydrocephalous, epilepsy, or Bright's disease of the kidney, but if he fails in arriving at some mode of treatment, his labors have been comparatively useless. We must confess, that without the patient's aid such is nearly the position of an investigator of onanism.

As a general indication of treatment, I would say, remove the cause, as the first step; viz.: if elongated prepuce, circumcise; if hypertrophied clitoris, amputate; if sebaceous secretion within prepuce, remove it; if pruritis, cure it; if from dentition, hasten it as much as possible; if diabetes, treat that, etc. The simple removal of the cause will be found inadequate to a cure, after the pernicious habit has once got a fair grip of the patient, who is either too young to understand how imminent his danger is, or has too little self-control to discontinue a habit. The one case will have to be restrained, in the other, the patient must be assisted to conquer that which he is insufficient alone to do. If we possessed medicines powerfully antiphroditic, either would be easy of accomplishment. But none such are embraced in our known therapeutical agents. The next best mode of cure is the establishing of an irritation, which will prevent, from pain, the use of friction. It is said that, in young children, the sudden dashing of water on the parts, while in the height of excitement, will sometimes, from the shock produced, effect a cure. It will be found most convenient in early age to pare the prepuce, place the child on a hard bed, learn it to sleep with its hands without the cover, and to enjoin a close surveillance, both night and day. This will usually be found sufficient; if not, irritation may be kept up by means shortly to be described. In grown males, if they will submit, the prepuce may be excised, if not, epispastics should be employed. The best vesicant I have found is croton oil, which does not possess the disadvantage of cantharides, which are liable to produce priapisms and strangury; or of sinapisms,

which produce a blister, instead of distinct and interrupted vesicles or pustules. These may be kept open by either unguentum cantharidis, or unguentum antimonii. I have frequently thought that if an impervious vagina, incapable of transmitting impressions, could be so constructed as not to incapacitate micturition, that it would afford material aid in assisting the patient in breaking loose from this vice. My idea is vague and flippant. I would have a belt pass around the body and fasten by lock and key, as in ankylosis apparatus. In grown females, the general indication to remove the cause should be followed, and then if an educated female conscience, and an innate female modesty and purity does not restrain them, they *are not worthy of treatment*.

And now I come to speak of *dernier resort*. It is well known that castration has been frequently resorted to, in the cure of epilepsy, having masturbation as a cause. When all other means fail, and epilepsy, idiocy, or insanity are imminent, I would unhesitatingly advise castration.

Before we close, there is one interesting point in the discussion of onanism, which is well worth a moment's consideration. The victim of self-abuse often quiets his conscience by asking why moderate onanism should be productive of more mischief than an equally moderate amount of legitimate indulgence? Is it because of the morbid excitement of the mind, the humiliation of an educated and intelligent conscience, or as some fanciful empiric suggests, may not there exist two kinds of electricities, which at the acme of excitement mutually replace each other, establishing an equilibrium, during normal sexual intercourse, but that during masturbation but one kind of electricity alone is expended? Dr. W. GOODELL, member of the Imperial Society of Constantinople, in an article entitled "Turkey from a Medical Point of View," says:—"Neither onanism nor pederasty, both of which prevail to a frightful extent in the East, emasculate the *morale* of the Oriental as much as they do the European." The restlessness, unmanliness, and unsteady vision are not seen. In explanation of this anomaly, he thinks we may draw one or two inferences; namely, that it should be attributed more to the "humiliation of an educated conscience than any physical drain

from the system; or where society openly upholds a vice it is not so apt to be intemperately abused, as when local rules of propriety, and militant precepts of religion compels the votary to invest the indulgence in strict privacy," (*vide N. A. Med. J.*, Vol. V., No. 3.)

ARTICLE XXVII.

ARMY REPORTS.

FROM H. WARDNER, M.D., Brigade-Surgeon.

CORINTH, MISSISSIPPI, *Sept. 9, 1862.*

PROF. N. S. DAVIS.

DEAR SIR:—I send you herewith a copy of the remarks accompanying the reports of two of the surgeons of our division. Together they give a very clear idea of the condition and treatment of the men generally in this division.

The following is taken from the summary of my consolidated monthly report for August, 1862.

Mean strength, (*i. e.*, those present,) 7189.

Number treated, 1703, (this includes all diseases, both chronic and acute, for the month.

The daily average on the sick list is about 600.

Deaths during the month, 23.

Remarks accompanying the Monthly Report of Surgeon H. C. FOOTE:—

CAMP 22D OHIO VOL. INF., NEAR CORINTH, MISS.,
August 31, 1862.

There have been in the regiment scarce any cases of fever of a grave character, almost all have been tertian intermittents, and all yielding readily and permanently to quinine.

The camp is situated on elevated ground, which is dry and airy, but has been in use for that purpose for several months. A little west of north, and about 500 yards distant, the ground is low, flat, and damp, but not swampy.

The supply of water is abundant, but not very good, consisting too much of surface water.

The prevailing diseases have been diarrhœa and dysentery, often very obstinate, and in some cases terminating in ulceration of the bowels, in spite of every effort.

Various plans of treatment have been resorted to, all successful in mild cases; all ineffectual occasionally. Most cases of diarrhœa were readily controlled by mild mercurials, not pushed to ptyalism, followed by astringents and opium. The saline treatment proved efficacious in many cases of both diseases, but on the whole has not accomplished as much good as I had hoped. Some obstinate cases of diarrhœa and dysentery, which resisted other treatment, have been much benefited by the administration of Fowler's solution and laudanum.

Nitrate of silver and sulphate of copper have hitherto failed in accomplishing any good results, and, in some cases, both of diarrhœa and dysentery, undoubtedly aggravated the disease.

There has been a deficiency in the supply of medicines, until within a very short time, and I have, in consequence, been prevented from following the course of treatment that seemed most proper in many cases; and, also, debarred from full observation and comparison of different plans of treatment.

The rations of the men have been abundant, of good quality, and sufficiently varied; but the cookery has been, and is, as a general rule, abominable. The frying-pan has been the chief dependance, and the soups, as a general rule, are greasy and ill-flavored. The men pay but little attention to the advice or remonstrance of the surgeon on these points, and it is only when the company officers second his efforts that any good result is accomplished, and this happens so seldom that the general health of the regiment is not affected at all. It is, however, proper to state that cases of diarrhœa and dysentery have occurred in patients in the hospital, under treatment for other diseases, and whose diet was carefully regulated.

There have been no cases of scurvy, pure and simple, during this month, and scarce any since the regiment has been in service, but very many of the patients have suffered in a way that

could not be accounted for, except on the supposition of some scorbutic taint. In various instances, but generally in cases of diarrhœa and dysentery, there has been marked œdema of the lower extremities, and sometimes of the face also. Partial paralysis of one or more limbs has not been uncommon, and in one or two cases, which proved fatal, there was ecchymosis, in one case quite extensive.

The treatment most successful with these cases, after subduing the active disease, was the administration of iron and acids, and nourishing diet.

There have been but few cases of disease of the respiratory organs, and these not severe.

The regiment has had a sufficient good supply of good tents, has not been on the march, and the weather has been favorable. There have been occasional showers but not long-continued rain, and no intensely hot weather.

Owing to want of instruments, I cannot give variations of temperature, etc.

Very respectfully,

H. E. FOOTE,

Surgeon 22d Reg't. Ohio Vol. Inf.

Remarks accompanying the Monthly Report of Surgeon C. B. LAKE, 7th Iowa :—

SURGERY.—None in regiment.

FEVER, Continued or Typhoid.—None.

REMITTENT—Type mild—Symptoms usual.—*Treatment.*—A free purge of Sulph. M. G. or Hyd. Sub. Mur. and Castor Oil, followed by two or three 5 gr. doses Sulph. Quinina, and the case is arrested. Sulph. Cinchonia and Brandy are used as a tonic, if any after treatment is required.

INTERMITTENT—No unusual symptoms.—*Treatment.*—From 8 to 10 grs. Sulph. Quinina at one dose, as soon as the sweating stage is established, with 6 to 8 grs. pill Hyd., and that followed next day by a purgative, if the secretions are not active.

DIARRHŒA AND DYSENTERIA—Grade active.—*Cause.*—The eating of green fruits, pies, and other indigestible substances.

Treatment.—Thoroughly evacuant, at first followed by Ano-

dyne and sometimes full doses of Sulph. Quinina. A common prescription with me, is:

R.—Sulph. M. G. ʒi.

Tart. Ant. et Potas, $\frac{1}{2}$ to 1 gr.

Mix and give. Repeated next day or day after, if necessary, followed by 5 gr. doses Pulvis. Doveri, if there is pain of the bowels. Wet cupping when there is tenderness of abdomen; perfect quiet; abstinence from all cold drinks; no food, except rice water or gruel. Under this treatment, it is altogether the exception if a case becomes chronic.

CHRONIC DIARRHŒA AND DYSENTERIA.—Chronic fluxes of the bowels have been the scourge of this regiment, and they are found in all forms and stages of the disease. The cause, I believe to have been the use of astringents and opiates, in the treatment of the acute disease. The treatment I have found most successful, since I came to the regiment. (which was last April,) is careful diet, dry cupping, counterirritation over the abdomen, and the exhibition of from 3 to 5 drops of Fowler's solution, two or three times daily. Under this treatment a large per cent. of the cases have entirely recovered.

RESPIRATORY DISEASES—Character mild—Symptoms usual.

Treatment.—Moderately antiphlogistic and expectorant, with quina if showing miasmatic symptoms.

RATIONS.—The ration consists of flour, made into light yeast bread, and baked in adoba ovens; rice, bacon, and pickled pork two-thirds and fresh beef one-third of the time,—the beef being made mostly into soup; potatoes and onions whenever they can be procured; coffee.

The troops are sheltered with tents, of which there is a scant supply, except for the dry season. The weather is mostly dry. Wind South most of the time, occasionally changing to N.W.

LOCATION OF CAMP.—The camp is located on dry table land, on the south side of a creek, fronting to the South. Sinks in the rear of regiment are filled every morning with fresh earth. Camp thoroughly policed. Tents struck frequently, and ground swept. Men all made to build bunks of poles or boards, about 18 inches from the ground, on which they sleep comfortably.

ARTICLE XXVIII.

CASES OF GUNSHOT WOUND.

Reported by O. B. ORMSBY, Assistant-Surgeon 18th Reg't. Ill. Vols.

W., of Stewart's Cavalry, aged 21 years, dark hair, black eyes, robust and in good health, was wounded July 28th, by a shot from a carbine or Maynard rifle, which entered his right shoulder, one and a-half inches below and posterior to the acromion process of the scapula, passed directly through the head of the humerus, and made its exit two and a-half inches below the middle of the clavicle. He was transported about 20 miles in an ambulance to the general hospital at Jackson, Tenn. Upon examination, it appeared that the ball had passed through the head of the bone without producing a great amount of comminution, and it could not be ascertained with certainty that the bone was at all injured by cracking or splitting outside the track of the ball. In the absence of positive assurance of greater injury, it was decided to rely upon the recuperative energies of nature to effect a cure. Resection was spoken of, but not being deemed absolutely necessary, was not performed. He was ordered cold dressings, which were continued without other interference, until July 31st., when he had sulph. magn. $\mathfrak{ssj}$. to relieve constipation. Cold dressing alone was then resumed, and continued until Aug. 8th, when he had Rochelle salts, $\mathfrak{ss}$., which failing to produce action of the bowels was repeated upon the following day. Cold dressing was again resumed until the 11th, when he had sulph. magn. $\mathfrak{ss}$. in two doses, taken six hours apart. Cold dressing again. On the 14th, was ordered stimulants and generous diet, which was continued up to the 20th, when the discharge had nearly ceased. His bowels being somewhat torpid, and his skin showing evidence of biliary derangement, he had on that day sub. mur. hydrarg. grs. v., at once. 22d. Hydrarg. eum creta, grs. x. Two powders given, six hours apart. 24th. Hydrarg. cum creta, pulv. Doveri, aa. grs. v., M., take at once. 25th, Hydrarg. eum creta, grs. v., at once. 26th. Fluid ext. prunus

Virginiana, 5ss., at intervals of three hours. 30th. Returns home soon; flesh and appetite good; soreness pretty much all gone. No more discharge of pus, and some motion in the joint. Only one or two small pieces of bone were discharged from the wound during the entire time. Had at first a little irritative fever, which immediately yielded when the bowels were freely opened.

In my opinion, this patient made a more speedy recovery, and will have a more useful limb than could have been secured to him by any operation whatever.

S. L., Irish, aged 38 years, wounded July 29th, by musket shot, which entered near the left scapula, and made its exit between the fourth and fifth ribs, of the same side, about two and a-half inches posterior to the left mamma. Was admitted to the general hospital, Aug. 2d, when there was considerable febrile excitement; pain in the left breast; difficulty of breathing; and occasional cough, with expectoration of blood. The wound was carefully examined, and all foreign substances were removed. The wounds were then dressed with compresses dipped in cold water; and as he complained of slight diarrhœa, was directed to take opium, grs. iii., sub. nit. bismuth, grs. xv., M., Divide into three powders, one every two hours. Aug. 3d. Dress with water. Aug. 4th. No movement of the bowels since the day before yesterday. Pulse 100, strong, tongue coated; give Rochelle salt, 5js. at once. Complains of much pain and restlessness at night, for which he had morphia sulph. grs. iii., in six parts, to be used at discretion of the nurse. 5th. Salts acted on the bowels, and from this day to the 9th, he had cold dressings and an occasional dose of morphia. On the 9th, the fever was abated, and the patient complains but little; but whenever he coughs, which is frequently, air is driven forcibly through the anterior wound, accompanied by bloody serum and pus. He was directed to take pulv. Doveri, grs. vi., at every severe paroxysm of cough; also, to have port or wine. 10th. Bowels torpid; give Rochelle salt, 5js.; continue cold dressing. 11th. Bowels have not moved; magn. sulph. 5ss. 12th. Wine. 13th. Sulph. magn. 5ss. 14th. Wine. 15th. Brandy toddy. 16th.

Continue toddy, and give Rochelle salt, $\mathfrak{z}$ ss. 17th. Toddy. 18th. Very weak; bowels costive; give sulph. magn. $\mathfrak{z}$ i., whiskey, $\mathfrak{z}$ viii., M., and give $\mathfrak{z}$ ss. every two hours, until the bowels move. 19th and 20th. Toddy. 21st. Has had fever two afternoons in succession; give sulph. quinina, grs. x., aromat. s. acid, $\mathfrak{z}$ ss., ether sulph. $\mathfrak{z}$ i., aqua, $\mathfrak{z}$ iv., M., tablespoonful every two hours. 22d. Wine. 23d. To-day, the air ceased to pass out through the wound. 24th and 25th. Wine. 26th. Has diarrhœa; takes Hope's mixture, $\mathfrak{z}$ iv., every two hours. 27th. Continued. 28th. Wound in the back is closed. 29th. No more wine; rest, and good diet. Sept. 2d. Needs only a little more flesh to make him fit for duty.

In each of these cases, the sulph. magn., even when it failed to act on the bowels, appeared to remove the febrile excitement almost entirely.

DANGEROUS FASHIONABLE FOLLY—GREEN ARTIFICIAL FLOWERS.

An analysis of green artificial flowers has been made by Prof. Hoffmann, for the Ladies' Sanitary Association; he says:—

“In a dozen of the leaves sent me, analysis has pointed out on an average, the presence of ten grains of white arsenic. I learn from some lady friends that a ball-wreath usually contains about fifty of these leaves. Thus a lady wears in her hair more than forty grains of white arsenic, a quantity which, if taken in appropriate doses, would be sufficient to poison twenty persons. This is no exaggeration, for the leaves sent to me were—some of them at least—only partly colored, others only variegated. In consequence of some inquiries, I have been led lately to pay more than usual attention to the head-dresses of ladies, and I observe that the green leaves are often much larger and more deeply colored than those which I have received.

“Ladies cannot, I think, have the remotest idea of the presence of arsenic in their ornaments. If aware of their true nature, they would be satisfied with less brilliant colors, and reject, I have no doubt, these showy green articles, which have not even the merit of being, as far as coloring is concerned, a truthful imitation of nature.”—*Medical News and Library.*

ARTICLE XXIX.

CLINICAL REMARKS ON THE BOWEL-AFFECTIONS
OF CHILDREN IN THE MEDICAL WARDS OF
THE MERCY HOSPITAL.

By N. S. DAVIS, M.D., Professor of Clinical Medicine, &c.

GENTLEMEN:—In a preceding clinic, I directed your attention to several cases of diarrhœa in children, and described to you the different varieties of bowel-affections met with in general practise; their history and characteristic symptoms; and the causes, both remote or predisposing, and exciting. This morning, I shall make some brief comments on the pathology of these affections, and then give you my views in regard to the principles on which their treatment should be conducted. From the careful review of the causes which are most efficient in producing this class of diseases, and their *modus operandi*, which was made at the preceding clinic, you will readily infer the most important items connected with their pathology. It was then shown that all the causes concerned in the production of the diarrhœa, cholera morbus, and dysentery of young children, co-operated to produce an increased susceptibility or irritability of the mucus membrane of the stomach and bowels, with a diminution of vital affinity, and consequent relaxation of the capillary system of vessels. This morbid excitability, coupled with impaired tonicity of the mucous tissue, constitutes the primary pathological condition in all the first and second groups of cases mentioned in the former lecture. The morbid excitability of the membrane invites a rapid influx of blood into it, while the diminished vital affinity and consequent relaxation of the texture admits of an equally rapid effusion or exudation of the serous part of the blood, and thus furnishes the matter for the copious thin discharges. The rapid loss of the watery element of the blood, carrying with it the salts by this effusion into the stomach and bowels, speedily diminishes all the glandular secretions, such as urine, bile, gastric and salivary juices, etc.; retards organic or molecular changes in all the tissues, thereby diminishing the

evolution of caloric; and causes a marked shrinking of the whole body.

The morbid sensibility of the nervous filaments involved in the mucous membrane, acted upon by the effused fluid, calls into action a reflex influence upon the muscular coat, and thereby establishes the frequent efforts to evacuate the stomach and bowels. Such are the pathological conditions which constitute the active stage of these diseases.

They cannot exist long, however, without inducing other pathological changes of no less importance. Thus the continuance of the serous discharges more or less rapidly exhausts the blood of its water and salts, leaving it too viscid to circulate freely through the capillary system of vessels; while the rapidity of effusion through the mucous membrane carries with it more or less of the epithelial cells of that membrane which may be easily detected in the evacuations by the aid of a microscope. If vomiting exists to such an extent as to prevent the retention of drinks long enough to afford any replenishment of the water in the blood, there will be danger of an entire suspension of capillary circulation, and a speedily fatal collapse. Or the increased viscosity of the blood may so modify its relation to the capillaries of the mucous membrane, as to stop the effusion and consequent discharges spontaneously before the state of collapse is reached. If the discharges thus cease before complete collapse ensues, rest and a judicious replenishment of the blood by liquid nourishment, soon restores the patient to health, in the majority of cases; but in some, another pathological state is developed which should never be overlooked. I have said that, during the active stage of diarrhœa or cholera morbus, the rapid efflux of fluid through the mucous membrane carried with it more or less of the epithelial cells of that membrane, and thereby produced more or less impairment of the texture.

Hence it happens that, when the discharges cease, capillary circulation and organic actions are resumed, and the patient is said to have a healthy reaction fairly established, the impairment of texture in some portions of the mucous membrane is such that the capillaries are incapable of resuming their circula-

latory function. Hence the blood accumulates in them; a low grade of inflammatory action is established in a few hours; and the general reaction passes beyond the healthy standard to that of fever; and, in common professional phraseology, the patient has passed from an attack of serous diarrhœa or cholera morbus to that of secondary enteric or typhoid fever. The asthenic grade of inflammation thus set up, may gradually subside and allow convalescence to be established in from one to three weeks, or it may progress through the successive stages of softening and ulceration, ending in the exhaustion and death of the patient. But the mucous membrane is not the only structure, in which the capillaries may fail to resume their function, when the active discharges cease, and the stage of reaction has come. When the attack has been violent, and the amount of serous discharge so great as to produce a very marked deficiency of water in the blood, the latter may become so altered in its relation to the capillaries of the brain that the circulation becomes too feeble to sustain the function of the cerebral hemispheres. In such cases, though the intestinal discharges may cease, the circulation and warmth be restored to the extremities, and a general appearance of healthy reaction be established, yet the patient passes into a state of more or less complete coma, from which it seldom recovers.

Another, and perhaps more frequent local failure in the resumption of capillary action, is in the kidneys. In the preceding lecture, I told you that one of the early effects of rapid and copious discharges from the mucous surface of the alimentary canal, was a partial or complete suppression of urine. It sometimes happens that when the active intestinal discharges cease, reaction takes place generally, but the secreting structure of the kidneys fails to keep pace with the improvement in other textures. Consequently no urine is secreted, and symptoms of uremic poisoning are speedily developed.

Such are my views of the pathology of the different stages of the first two groups of bowel-affections, described in the preceding clinic. The pathology of the third group of cases, which we described as accompanied by fever from the commencement

of the attack, differs in one primary element from the first two. There is the same morbid susceptibility or irritability of the mucous membrane, and consequently the same unnatural influx of blood into it; but the general relaxation of the capillaries, which in the first cases allowed a rapid escape of the fluids constituting serous discharges, does not exist in this group. Consequently, although the efforts at vomiting or purging, or both, may be frequent and severe, yet the amount of fluids actually evacuated is not large, and they are found to consist largely of mucus, thereby indicating the existence of inflammation.

These pathological views afford us clear and definite indications for treatment in each successive stage of these diseases. Thus, in the first stage of those cases characterized by simple serous discharges, either by vomiting or purging, the indications are to allay the morbid irritability of the mucous membrane, and to increase the tone or contractility of the capillaries. To fulfil these, requires the judicious combination of a tonic and anodyne.

Among the best combinations of this kind are the following :

R.—Aromat. Sulph. Acid,	ʒj.
Sulph. Magnesia,	ʒj.
Tinct. Opii.....	ʒj.
Simple Syrup,	ʒj.
Water,.....	ʒj.

Mix, and give to a child one year old, 15 drops every two, three, or four hours, according to the frequency of the discharges.

R.—Tannate of Quinine,	4 grs.
Pulv. Opii.	1 gr.
White Sugar,.....	20 grs.

Mix, and divide into eight powders, of which one may be given every three, four, or six hours, to a child of the age just mentioned.

In the early part of mild cases, the use of one or the other of these formula will generally speedily restore the patient to health. But if the attack is more severe, characterized by, not only frequent serous discharges, but also partial or complete suspension of important secretions, such as urine and bile, we

must combine the anodyne with an *astringent* instead of a tonic, and add to both a small dose of some alterative to aid in restoring these important glandular secretions. In such cases, if the vomiting is frequent, and more especially if the matters ejected are sour, I make a solution of bi-carbonate of soda one drachm, and sulphate of morphine one grain in two ounces of water; and of this give from 6 to 15 drops, according to the age of the child, immediately after each act of vomiting. At the same time, give one of the following powders, every three hours, until the discharges cease, viz.:

R.—Hydrarg. Chlorid. Mite,	3 grs.
Acetas Plumbi,	3 grs.
Pulv. Opii,	1 gr.
Sacchar. Alba,	20 grs.

Mix, divide into six powders.

The rule to give whatever medicine is designed to suppress the vomiting, in small doses, *immediately* after each act of vomiting, is one of much practical value.

Vomiting is an act that cannot be perpetuated continuously, but must always occur in paroxysms with an interval of greater or less length between them. Hence, if a dose of medicine is swallowed immediately after a paroxysm of vomiting it will remain in contact with the mucous membrane of the stomach a few minutes, at least, before another effort at vomiting can be performed. During these few minutes, if the medicine is soluble or already in solution, it will gain some effect, both on the nervous filaments and the capillaries of the mucous membrane. And a repetition of the dose immediately after each paroxysm of vomiting, will soon accumulate an effect sufficient to destroy the morbid sensibility, and consequently stop the vomiting. But if we follow the wishes of the patients, and the inclination of almost all nurses, by withholding the medicine after vomiting until the patient has "rested a little," that little period of rest is just sufficient for the muscular coat to regain its contractility, and the mucous coat to pour out a new supply of serous fluid, and consequently the patient is all ready for another paroxysm of vomiting. Now, if the dose of medicine is administered, in

nine cases out of ten, it will be rejected almost as quick as swallowed, and the effect is lost.

The same rule is equally important in reference to the use of enemas for aiding in the suppression of diarrhœa or dysentery. They should always be administered as speedily after an evacuation as possible, and while the rectum is entirely empty. The longer the enema is delayed after an evacuation, the more mucous or serous fluid has accumulated in the intestine, and the more readily will the introduction of the enema be followed by an immediate expulsion. You thus see, gentlemen, that in the more violent gastric and intestinal affections, success in their treatment depends almost as much on the time and manner of administering medicine as on the kind of medicine chosen.

I have just stated, that in those cases characterized by frequent vomiting of serous fluid and intestinal discharges, thin and destitute of the coloring matter of bile, small and frequent doses of a solution of morphine and soda, with less frequent doses of calomel and acetate of lead, usually constituted the most efficient means for checking the active progress of the disease, and at the same time favoring the restoration of secretion in the more important organs of depuration, as the kidneys and liver. But many cases are met with, in which the discharges, instead of being sour and destitute of the coloring matter of bile, are all bitter and highly colored with the latter fluid, thereby showing a superabundance instead of deficiency of the biliary secretion. In such cases, instead of giving alkalies or alkaline salts and mercurials, all of which tend to increase glandular secretions, I resort directly to the simple combination of anodynes and astringents, as follows:

R _x .—Acetas Plumbi,	15 grs.
Sulph. Morph.	1 gr.
Aqua,	5j.

Mix, and give to a child one year old, 10 drops after every paroxysm of vomiting; or if the vomiting ceases, and the intestinal discharges continue, the same dose may be continued every three or four hours. In using simple anodynes and astringents, it must be remembered that copious intestinal evacuations are

almost always accompanied by scantiness of urine, and that the suppression of such evacuations by opium and simple astringents, whether mineral or vegetable, often leaves the kidneys still in a very inactive state. This difficulty can generally be obviated by giving the child a teaspoonful of the following, between each of the doses of opium and acetate of lead:

R.—Spts. Nit. Dulc.....	5ss.
Acetas Potassa,	5jj.
Simple Syrup,	5jjss.

Mix. Shake it up when used.

This seldom offends the stomach, and renders efficient aid in restoring a healthy action of the kidneys.

When the acute stage of cholera infantum and serous diarrhoea has passed by, and the disease assumes a chronic form, with rapid emaciation, coolness of the surface and extremities, and the intestinal discharges still thin, with no dysenteric straining, and little or no intermixture of mucus, then I find some one of the following formulæ to afford relief:

R.—Erigeron Can. herb,	5ss.
Tannate of Quinine,	20 grs.
Sulph. Morph.	1 gr.

Mix. Pour on the whole half a pint of boiling water, to make an infusion. When cold, give to a child one year old, a teaspoonful every two, four, or six hours, according to the frequency of the discharges. This combination has the advantage of being moderately diuretic and tonic, while it is efficiently anodyne and astringent, and has been much used by me for several years past.

In mild chronic cases, in which the evacuations show an excess of acid or sourness, the following will often answer the purpose well:

R.—Fluid Chalk Mixt.	5jss.
Tinct. Cinnamon,	5ss.
Camph. Tinct. Opii.	5j.

Mix, and give from 10 to 30 drops, according to the age of the child, three or four times a day.

In protracted cases, accompanied by an anemic condition of

the patient, the liquor ferri nitratis, in suitable doses will be found very valuable.

Five or six drops of this preparation of iron may be given to a child between 12 and 18 months old, at each mealtime, and one of the following powders at bedtime, viz.:

R.—Tannate of Quinine,	3 grs.
Pulv. Opii.	1 gr.
Hydrarg. cum creta,	3 grs.
Sacchar. Alba,	20 grs.

Mix, divide into six powders.

This is substantially the treatment we directed for the several children you examined at the last clinic.

The third group of bowel-affections of children, those which were described as accompanied by fever and mucus in the discharges, involve a true inflammatory condition of mucous membrane, and their treatment involves the same principles as the treatment of enteric fever and dysentery in adults. Hence, it will be more appropriately discussed when we have cases of those diseases before you.

Selections.

REPORT OF THE COMMITTEE OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY, ON THE SUBJECT OF SUSPENDED ANIMATION.

The inquiry was conducted—

By means of experiments upon living animals;

By means of experiments upon the dead human body.

In investigating anew the subject of apnœa by means of experiments on the lower animals, it seemed expedient to observe, in the first place, the principal phenomena of apnœa in its least complicated form—namely, when produced by simply depriving the animal of air.

The principal facts to which attention was directed during the progress of the apnœa thus induced were—

The duration of the respiratory movements;

The duration of the heart's action.

The duration of the heart's action was observed—

(a) In relation to the duration of the respiratory movements.

(b) In relation to the time after the stoppage of the breathing.

From the experiments performed, it appeared that in the dog the average duration of the respiratory movements, after the animal has been deprived of air, is 4 min. 5 sec., the extremes being 3 min. 30 sec. and 4 min. 40 sec. The average duration of the heart's action is 7 min. 11 sec., the extremes being 6 min. 40 sec. and 7 min. 45 sec.

From these experiments, it appears that on an average the heart's action continues for 3 min. 15 sec. after the animal has ceased to make respiratory efforts, the extremes being 2 min. and 4 min. respectively.

Rabbits, on an average, ceased to make respiratory efforts in 3 min. 25 sec. Their heart's action stopped in 7 min. 10 sec.; consequently the interval between the last respiratory effort and the cessation of the heart's action was 3 min. 45 sec.

The next question investigated was—the period after the simple deprivation of air at which recovery is possible, under natural circumstances, without the aid of any artificial means of resuscitation.

The experiments performed led to the conclusion that a dog may be deprived of air during 3 min. 50 sec., and afterwards recover without the aid of artificial means; that a dog is not likely to recover, if left to itself, after having been deprived of air during 4 min. 10 sec.

The force of the inspiratory efforts during apnoea was observed in the experiments to be so great that it was determined to measure them. They were found to be capable, in the dog, of raising a column of mercury four inches. It appeared, moreover, that their force increases up to a certain period.

In other experiments, plaster of Paris, and even mercury, were thus drawn upwards into the minute bronchial tubes.

It is easy to understand, therefore, how foreign bodies may be drawn into the lungs, in cases of drowning, and the importance of this fact in the consideration of the pathology and treatment of apnoea.

The committee next passed on to the subject of drowning.

The first question investigated was—For what period can an animal be submerged, and yet recover without the aid of artificial means?

It was found, as the result of numerous experiments on dogs, that in striking contrast to the previous ones, $1\frac{1}{2}$ minute's immersion in water suffices to destroy life.

Other experiments satisfactorily showed that the difference of time between simple apnoea and that by drowning is not due to submersion, or to depression of temperature, or to struggling, but that it is connected with the fact, that in the one case a free passage of air out of the lungs, and of water into them, is permitted; in the other, the exit of air and the entrance of water are prevented.

There can be no doubt, from other considerations put forward, that although both these circumstances are concerned in producing the difference observed, yet that it is mainly due to the entrance of water and the effects thereby produced.

The treatment of apnoea was next considered.

For conclusions respecting artificial respiration, the committee refer to the second portion of the Report.

Many other methods of resuscitation which have been recommended were employed, including actual cautery, venesection, cold splash, alternate application of hot and cold water, galvanism, puncture of the diaphragm.

Although some of the above means were occasionally of manifest advantage, no one was of such unequivocal efficacy in a sufficient number of cases as to warrant the committee in specially recommending its adoption.

The experiments upon the dead subject were made with a view to determine the value of the various methods which have been employed for alternately compressing and expanding the cavity of the chest in such a manner as to imitate the natural movements of the thoracic walls in breathing. The following methods have been investigated:—

1. Pressure exerted by the hands on the anterior wall of the thorax, the body being in the prone posture. Such pressure has for its object, to expel a portion of the air contained in the chest; on relaxing the pressure, the chest expands and air enters.

2. The postural, or so-called “ready” method, described by Dr. Marshall Hall, consists essentially in “turning the body gently on the side and a little beyond, and then briskly on the face alternately;” and in making pressure along the back of the chest each time the body is brought into the prone position.

3. The method of Dr. Silvester, in which the action of the pectoral and other muscles passing from the shoulders to the parietes of the chest in deep inspiration is imitated. An inspiratory effort is produced by extending the arms upwards by the sides of the head; on restoring them to their original position by the side of the body, the expanded walls are allowed to re-

sume their previous state, and expiration takes place, the quantity of air expelled being in proportion to that which had been previously inspired.

It being necessary to measure the flow of air in and out of the respiratory cavity under conditions of pressure closely resembling those which exist in natural respiration, no means of measurement could be used, which, in its working, would offer any appreciable resistance to the passage of air. With this consideration in view, an instrument designed by Dr. Sanderson was employed.

GENERAL RESULTS.

1. As regards the volume of air which can be expelled from the thorax by compression of its walls, and inspired by the elastic expansion consequent on relaxation of the pressure, it was found —

(a) That pressure by both hands on the lower third of the sternum in the adult male subject usually displaced from 8 to 10 inches of air.

The pressure actually exerted amounted to about 30 lbs. It was, therefore, not greater than might be safely applied to the living subject. The volume of air expelled varied from 8 cubic inches to 15 cubic inches.

(b) That pressure made in the same manner on the upper part of the sternum usually displaced 2 or 3 cubic inches less than pressure on the lower part.

(c) That pressure exerted by one hand on the upper part, by the other on the lower part of the sternum, produced about the same results as were observed in *a*.

In this case, the whole amount of pressure did not exceed that exerted in *a*.

(d) That the pressure of a weight laid on the lower third of the sternum produced similar results according to its amount.

(e) That lateral pressure exerted on the ribs or costal cartilages of both sides simultaneously was in no instance more effectual.

(f) That compression by a broad bandage encircling the chest, the ends of which were crossed over the sternum, and drawn in opposite directions by two persons, produced no greater effect than pressure with the hands on the sternum or sides.

2. As regards the whole amount of exchange of air produced by the method of Dr. Marshall Hall, "to imitate respiration," it varied much, according as the subject was favorable or the contrary; sometimes not exceeding a few cubic inches, but never exceeding 15 cubic inches.

3. As regards Dr. Silvester's method, it was found, that on extending the arms upwards, a volume of air was inspired into the chest, which varied, in different subjects, from 9 to 44 cubic inches, and it was observed that the results obtained in successful experiments on the same body were remarkably uniform, in which respect, as well as in their amount, they contrasted with those obtained by the method of Dr. M. Hall. On restoring the arms to the side, the quantity of air expelled was generally nearly equal to that previously inspired, occasionally less.

In the treatment of apnoea generally, the committee offer the following suggestions:—

That all obstruction to the passage of air to and from the lungs be at once, so far as is practicable, removed;—that the mouth and nostrils, for example, be cleansed from all foreign matters or adhering-mucus.

That in the absence of natural respiration, artificial respiration by Dr. Silvester's plan be forthwith employed in the following manner:—The body being laid on its back (either on a flat surface, or, better on a plane inclined a little from the feet upwards), a firm cushion or some similar support should be placed under the shoulders, the head being kept on a line with the trunk. The tongue should be drawn forward so as to project a little from the side of the mouth. Then the arms should be drawn upwards until they nearly meet above the head (the operator grasping them just above the elbows), and then at once lowered and replaced at the side. This should be immediately followed by moderate pressure with both hands upon the lower part of the sternum. This process is to be repeated 12 or 14 times in the minute.

That if no natural respiratory efforts supervene, a dash of hot water (120° Fahr.) or cold water be employed, for the purpose of exciting respiratory efforts.

That the temperature of the body be maintained by friction, warm blankets, the warm bath, etc.

In the case of drowning, in addition to the foregoing suggestions, the following plan may be in the first instance practised:—Place the body with the face downwards, and hanging a little over the edge of a table, shutter, or board, raised to an angle of about 30 degrees, so that the head may be lower than the feet. Open the mouth and draw the tongue forward. Keep the body in this posture for a few seconds, or a little longer if fluid escapes. The escape of fluid may be assisted by pressing once or twice upon the back.

[Signed by the Committee of eight, C. J. B. WILLIAMS, Ch'm.]

Dr. C. J. B. Williams said, that if the subject of suspended animation and its treatment appeared to be one of the greatest importance when the committee were appointed for its investigation, the result of their labors did not make it less so; for during their researches, several new points of both physiological and practical interest had arrested their attention. The Report just read contained a large mass of facts bearing on the subject, and these facts would be fully appreciated when they should be maturely considered; but the members of the committee thought it might be acceptable to the Society if one of their body were to give a short summary of some of the most striking results. He (Dr. Williams) had been requested to do this since he entered the room, and not having been previously aware of the office which would devolve on him, he was not prepared to go fully into details; but he believed that he was sufficiently acquainted with the general results of the experiments to be enabled to give a summary of their most important features. He would premise that he could take no merit to himself with regard to the experiments which had been so ingeniously devised and laboriously carried on by other members of the committee. He had been present at very few of the experiments themselves; but, as chairman of the committee, had merely assisted in receiving and completing the reports from the sub-committees. The committee, having to consider the subject of "Suspended Animation," directed their inquiries to that kind of interference with life which results from stoppage of the breath in suffocation, strangulation, and drowning.

The first series of experiments was to investigate the result of simple apnoea, or stoppage of the breath; and for this purpose the trachea of animals was opened, and a tube inserted so as to command the supply of air; and this tube being furnished with a stop-cock could be closed, and the results noted, especially these:—After the closure of the tube, 1, how long respiratory efforts continue; 2, how long the heart's action continues; 3, how long the heart beats after the breathing efforts cease. The experiments show a considerable variety of result: but, as a general average, it may be stated that in dogs efforts at breathing continued a few seconds more than four minutes after the closure of the tube; and the heart's action three minutes and a-quarter longer. The duration and force of these respiratory efforts, in an animal deprived of air, were not more remarkable than important, as indicating the period within which an animal deprived of air could recover; and this was found to be almost, but not quite, as long as the duration of these efforts—

that is to say, a dog deprived of air four minutes only, would recover; but if the exclusion of air lasted ten seconds longer, he did not recover. The extraordinary force of these struggles for breath was shown by plunging the end of the tube into mercury; when it was found that the inspiratory effort sometimes raised a column of four inches of mercury, and, if the tube was shorter, would draw the quicksilver in considerable quantities into the bronchial tubes and air-cells of the lungs.

The next subject of investigation was suspended animation from drowning; and here the experimenters soon found a remarkable difference in the greater rapidity of the death, and the shorter time during which life is recoverable. An animal simply deprived of air for four minutes may recover; but one immersed in water for one minute and a-half is irrecoverably dead. Recovery took place in several cases where the immersion lasted one minute and fifteen seconds; but fifteen seconds more made all the difference. The experimenters proceeded to search into the cause of this peculiarly destructive operation of drowning, as compared with simple privation of air: and very soon they were enabled to trace it to the action of the water itself, forcibly drawn into the lungs by the respiratory struggles of the animal. Two dogs were plunged into water, one having its trachea closed by a stop-cock at the moment of immersion. The dog with the trachea free was taken out in two minutes, irrecoverably dead. The other, with the trachea closed, was taken out at the end of four minutes; the trachea was opened, and in the course of a few seconds the animal began to gasp, and soon recovered. Another mode of diminishing the inspiratory struggles of the animal was by stupefying it with chloroform before immersion in water, and it was actually found that recovery took place after two minutes and fifteen seconds immersion. On this point he (Dr. Williams) adverted to a popular opinion, that it was more difficult to drown a drunken man than one who is sober, as having some foundation on this fact, that insensibility of any kind retards the fatal influence of drowning by diminishing those violent struggles for breath which, by forcing water into the lungs, soon put the case beyond recovery. But nothing so fully pointed out the extent and nature of the fatal influence of water in the lungs as the appearance of these organs in drowned animals as compared with those killed by simple apnoea. In the latter, the air-passages remained free from all secretion or effusion, and the lungs themselves were light and buoyant, and contained remarkably little blood. Now, this is contrary to what is generally described as the state of the lungs

in asphyxia; and probably in ordinary cases, where death is not sudden, but prolonged, more or less engorgement may take place. But here there was no engorgement or obstruction, and it is not wonderful that animals would recover more readily. But with drowned animals not only were all the air-passages choked with frothy fluid, and that fluid generally more or less bloody, but the whole lungs were always highly engorged with blood, so that they were heavy, dark colored, pitted on pressure, and on being cut, exuded an abundance of blood-tinged fluid, with many air-bubbles in it.

On this subject he would make two remarks, on his own responsibility, apart from his office in the committee. One was, How opposed these observations and conclusions are to those many years ago propounded by Goodwyn, in his treatise on Suspended Animation, whose opinions have generally been adopted to the present time. Goodwyn concluded, from his observations, that water never to a hurtful extent enters the lungs of the drowned, and he deprecated the popular practise of hanging up a drowned person by the heels to let the water run out. He (Dr. Williams) was by no means sure that, as Dr. Goodwyn was certainly wrong in his pathology, some modification of the popular practice may not be beneficial.

The other remark related to the mode in which the water which got into the lungs of the drowned proved so rapidly and extensively injurious. No doubt much was due to its mechanical pressure on the tubes and cells, forming an impervious barrier to the readmission of air; but this would not account for the extraordinary increase of blood in the lung, and its transudation into the air-tubes. He believed the injurious influence of water to be due to its chemical power of acting by endosmosis on the blood within the capillaries of the lungs, swelling up and bursting the blood-corpuscles, and causing their rapid accumulation in the organ, and their extravasation into the bronchial tubes. This was a subject for further experimental investigation, and he thought it one of great importance, as bearing on the action of water as a noxious or a therapeutic agent.

He would not detail the various means of resuscitation which were tried by the committee, but the results of the trials were not such as to induce the committee to recommend them strongly for general adoption. Various instructive experiments were made on different modes of performing artificial respiration, and the most conclusive of these had reference to the so-called "ready methods" of Dr. Marshall Hall and Dr. Silvester. One

of their committee (Dr. Sanderson) contrived the apparatus on the table for measuring the air which could be forced out of it into the lungs of a dead body by these methods of artificial respiration; and the general result was, that by Dr. Hall's method the quantity of air moved in and out of the lungs rarely reached nine cubic inches, and never exceeded fifteen; whereas, by Dr. Silvester's plan, an interchange of forty cubic inches was effected; and when this method was further improved by alternating the drawing up of the arms, with depressing them, and with pressure on the lower part of the sternum, the expelled air was as much as fifty cubic inches. So far, then, as these experiments go, they show a great superiority of Dr. Silvester's over Dr. Marshall Hall's "ready method."—*Boston Med. & Sur. Jour.*

ON THE TREATMENT OF TUBERCULAR HEMOPTYSIS.

By DR. WILLIAM BRINTON, Physician to St. Thomas's Hospital.

Of course, pulmonary hemorrhage has the usual long list of specifics, each of which, in the eyes of its partizans is so efficacious that one can hardly avoid wondering anybody should be so foolish as to die of hemoptysis at all. Alum, turpentine, mercury, the mineral acids, acetate of lead, sulphate of copper, tanic acid and a host of analogous astringents, ipecacuanha, tartar emetic, the external application of ice, figure amongst the favorite remedies of this kind. The variations of diet have been scarcely less striking than those of drugs; the patient who would have been nearly starved twenty years ago to favor coagulation of the blood in the ruptured vessels, being now sometimes crammed with food, and drenched with stimulants, at frequent intervals, in order to "keep up his strength."

Warned by such discrepancies, I think we are justified in regarding as inconclusive what are often termed the "teachings of experience"—namely, the mere events which follow the adoption of this or that drug or dietary in the treatment of the malady. Here, as elsewhere in the study of therapeutics it is our first duty to check the uncertainty or bias which must sometimes beset the conclusions of the most judicial intellect, by a study of the nature and history of the disease, and by the physiological action of the remedy. What *is* hemoptysis, on the one hand? What does the particular drug do to the healthy body, on the other?

Unless we can at least partially answer the first question, it is difficult to see how we can conclude any remedy really useful. Unless you can answer the second, and point to at least an analogy between the effects of the drug in health and in disease, it is nothing short of a very complete and large account of the natural course of the malady that would enable us to accept any recovery as a cure. True it is that quinine cures most forms of ague, and mercury some forms of syphilis, by agencies which are quite inexplicable from the mere physiological effects of either drug respectively. But here our knowledge of the course of the two maladies, unmodified by their respective specifics, proves the reality of the cure. It is not so much a multiplication of coincidences, as an asservation of cause and effect, which is thus afforded us.

Looking back to the variations of hemoptysis already alluded to, and eliminating the casual bleedings of pleurisy, and the more essential, but dilute, hemorrhages of pneumonia, you will remember that we noticed the hemoptysis of pulmonary tubercle as presenting itself in three forms of very different frequency and gravity. The afflux, or active congestion, of the first stage of tubercular deposit, and the obstruction and erosion in the second stage, affect chiefly the smaller vessels of the diseased organ. The large ulceration of the third stage occasionally lays open a bloodvessel of considerable magnitude. The first two are of frequent occurrence; indeed, the second is, in greater or less extent, almost a necessary incident of the malady. The latter is fortunately rare.

Now, of these two commoner varieties of tubercular hemoptysis, it may be unhesitatingly affirmed, that in a very large percentage of their cases the bleeding would cease spontaneously. Indeed, inquiry amongst the poorer classes, who form the outpatients of our hospitals, shows that hemorrhage of this kind commonly ceases in a day or two: not only without medical advice, but often in defiance of the want of that perfect rest and unstimulating diet which, apart from drugs, constitute the best means of favoring its arrest. And I need hardly say that, in such a process, Nature is only stanching an internal bleeding by the same means which she ordinarily employs to arrest an external one; means which, though in the case of these pulmonary vessels they have to fight against additional obstacles in the shape of the alternate suction and compression of breathing, and the agitation of cardiac movement, are yet in the main sufficient.

Hence, to assert that these frequent and scanty hemorrhages generally cease after the administration of any of the above

drugs, is to state a fact which, the moment it is made to sustain an assertion of their specific operancy as stiptics, may be challenged as an instance of the fallacy "*post hoc, ergo propter hoc*;" for the fact is utterly insufficient to sustain any such conclusion. The bleeding may have ceased spontaneously; a recovery which, supposing the instincts of the patient have been allowed full play in the matter of rest and diet, is even additionally explicable. Strictly speaking, the mere coincidence scarcely entitles us to affirm more of stiptic power in the drug than if the bloodvessels concerned had been those of a cut finger.

In all cases of hemoptysis, the first indication of treatment is suggested by the pathology of these, and indeed most other, morbid hemorrhages. That the bleeding is generally preceded and accompanied by great congestion of the bloodvessels nearest the lesion is a fact about which there can be no doubt whatever. And that the removal of this condition can often be effected by smart aperients is another fact which may be as unhesitatingly asserted. Nowhere are these statements better verified than in the digestive canal; where, for example, you may sometimes see in the submucous areolar tissue that the nodule of deposit which has excited a copious hemorrhage, is surrounded by an inch or two of deep velvety congestion, with a well-defined margin towards the neighboring healthy structures; and where the virtues of drastic purgatives in mckena constitute an experience as old as the days of Hippocrates. And all the purgatives which one may give with this purpose, the old-fashioned dose of blue-pill or calomel, followed by a black draught, seems really the quickest and most efficacious. Under all ordinary circumstances its administration, and, if needful, repetition, should be a prominent feature of the treatment.

Then as to the drugs for checking hemorrhage, by their astringency or otherwise. There seems to be a kind of notion in the minds of some therapeutical writers, that such drugs as turpentine, alum, gallie acid, acetate of lead, sesquichloride of iron, etc., etc., when taken into the stomach, are received into the blood in quantities sufficient to communicate to this fluid those styptic properties which they undoubtedly possess when applied to an external wound, or to a bleeding stomach, or perhaps (through the urine) to a bleeding bladder. But I know of nothing to confirm such a notion. And I think that those who would look the facts of therapeutics sturdily in the face (which, not wishing to die a homœopath, I intend to do), would scarcely think twice about the matter. At any rate experiment would soon afford some analogical answer. Stir up 10 grains of gallie acid,

or 10 minims of tincture of sesquichloride of iron, in 10 or 20 pints of blood, and I think the resulting solution would be a styptic of a somewhat Hahnemannian degree of diluteness; not nearly so potent, one may anticipate, as the compound tincture of benzoin which, forty years ago, was the favorite application of some old-fashioned country surgeons to stanch the bleeding of a superficial wound, and which, in its turn, modern surgeons have practically superseded by a little patience and cold water.

Of other remedies for hemoptysis one may speak more respectfully, though with some qualifications. Ice, for example, seems occasionally of service. But the internal congestion, invariably produced by great external cold, suggests that, save where the source of the hemorrhage is near enough to the surface to be directly affected by it, its benefits may be more than questionable. And of ipecacuanha, which many excellent authorities think highly of, in small and frequent doses, (a grain every ten or fifteen minutes,) I can only say that I have known its use followed by great exhaustion and nausea, and a very protracted convalescence, but, (what is more to the purpose,) that over and over again I have known it utterly fail in any degree to moderate such a hemorrhage.

In short, all else that I have to say of such remedies might almost be summed up in the statement, that it is in the terrible hemorrhage of larger eroded vessels, and therefore of what is often advanced phthisis, that we have the most searching test of the value of any drug of this kind. Presuming we have such a means, we must very frequently use it; for it is often impossible to tell beforehand whether a slight oozing is not the commencement of a more considerable hemorrhage, such as (directly or indirectly) endangers life. And I believe that we have such a remedy, for the majority of patients, in *digitalis*.

The grounds for the strong personal conviction I find chiefly in the fact, that I have repeatedly seen profuse and alarming hemoptysis, which had resisted many other means of treatment, including a most judicious diet, and all the other drugs above enumerated, yield to this active remedy, given so as to produce its well known specific effects on the pulse. And not only so, but, in several cases, the interruption of the drug seems to have permitted the return of the hemorrhage, to be again arrested by the resumption of the *digitalis*. Our patient in bed No. 9, of Jacob's ward, so far illustrates this point as that, thrice over, the gradual disuse of the *digitalis*, at intervals of two and three weeks from the previous cessation of the hemoptysis under the use of the drug, has been followed by fresh attacks. And the

very same physiological effects which confirm the efficacy of digitalis may suggest the details and qualifications of its use. Pray remember that it is too much of an edged tool to be carelessly handled; and hence that, if you cannot or will not take the trouble to watch over its administration, you had best not give it at all. From thirty to ninety minims of the officinal tincture daily, in four or six doses, is as much as is generally requisite; and, (as has been pointed out by Sir Henry Holland, in that chapter of his classical work devoted to the consideration of this drug,) it is often not the robust, strong man who bears or demands the largest dose. Keep the patient quiet, and in the recumbent posture—an attitude for which the drug is a double argument in this malady. Judge, by repeated enquiry, how far, or how quickly, the digitalis is acting on the pulse; and, as a rule, reduce the dose as soon as the pulse has dropped to the slow rate, (30 to 50 or 60 per minute,) which is the usual result of its action both in health and in disease. Lastly, for those who like polypharmacy, the drug combines well enough with dilute sulphuric acid during the attack, and with sesquichloride of iron during the convalescence, without substantial detriment to its own much greater virtues.—*Lancet*, Nov. 30, 1861, p. 516; *Braithwaite's Retrospect*.

CLINICAL REMARKS ON SYMPATHETIC INFLAMMATION OF THE EYEBALL, ITS DANGER, AND THE MEANS OF ARRESTING IT.

Made at the Central London Ophthalmic Hospital.

By HAYNES WALTON, Surgeon to the Hospital.

The subject is among those in this department of medicine that modern observation has thoroughly recognized, and investigation and rational experiment have found a remedy for. Sympathetic inflammation, or sympathetic ophthalmitis, may arise out of any circumstances that produce disorganization of the eyeball. It is most commonly, however, seen when an eye has been spoiled by wounds. This is the usual course of things. An eye is wounded, perhaps severely, and the lens has escaped, or a portion of the vitreous humour; or, perhaps, the cornea only has been penetrated, and the iris, or the lens wounded. The acute and primary inflammatory attack is subdued, and chronic disease supervenes. The heretofore sound eye gets intolerant to light, the first common result; impaired vision in

some form is the next bad omen. Loss of focal adjustment, incapability of sustaining vision on minute objects, loss of definition (generally called feeble sight), museæ, spectra, flashes, stars, inflammatory action, loss of pupillary movements, change of iris color, softening of the eyeball, and shrinking, are the later manifestations. Thus it would seem that the morbid action travels from the retina forwards. Ultimately, all the ocular tissues are involved, and atrophy ensues. There may be varieties in the subjective and objective symptoms; and there may be no pain, or it may exist with great severity.

The sympathetic action is imminent, so long as any irritation produced by the traumatic disease lingers, so that it may be developed in a few weeks, or not for years. It cannot be said that any peculiar form of wound, or the injury of any particular tissue, excites that kind of action which develops the sympathy; as blows without breach of surface, or chemical injuries, may cause it.

Inflammatory affections producing disorganization of the eye may induce sympathetic disease. I have seen the greater number of cases arising from staphyloma of the cornea and the scleroticæ—that is, general enlargement of the eyeball—the result of purulent ophthalmia in infancy, than any other cause.

The diagnosis is by no means obscure, and in traumatic cases it is most easy. The eye primarily injured or diseased, always manifests symptoms of irritation or disturbance; and their is evidence of acute or chronic inflammation. These may be slight; but they are to be discerned with care. There is always soreness under touch. So far as I know, vision is invariably extinct. If, then, a patient who has lost an eye from accident or disease, were to apply to me on account of the eye heretofore well, but now attacked with any of the symptoms that I have pointed out of sympathetic derangement, I should examine the eye primarily injured; and if I discovered any morbid action in progress, any of those states which are connected with, or arise out of, what is called inflammation, I should say that I had before me a case of sympathetic ophthalmitis.

There are two errors into which you may fall, but they are easily avoided when you are on your guard. Do not, then, mistake for sympathy what is merely the same disease that has appeared in the one eye, and is secondary only in the order of time. Remember that the destruction of one eye, from any cause, may be followed, although the occurrence is not common, by the loss of the power of the retina in the other, and this without the least trace of any active symptom in that which was

hurt. Precisely the same thing may occur after the one eyeball has collapsed, or has even been extirpated, so that sympathetic inflammation can have nothing to do with it.

The treatment is definite and sure; but is not to be found in general remedies, local applications, nor any dietary system. Nothing of the kind can be depended on; the affection can be stopped, or subdued, only by surgical treatment. A portion of the originally diseased eyeball must be removed, whereby the products that have set up the irritation, or the cretaceous, or ossified tissue, which has acted as a foreign body, may be got rid of; or extirpation resorted to. The practice works wonders when done early. If adopted before the sympathetic action has induced palpable structural changes, it will be all effectual. At later stages it may arrest progress, and stay the destruction. Even when the pupil has become adherent to the capsule of the lens, and the iris dull, I have known a check.

As a rule, the removal of a portion of the eyeball, "abscission," is adapted to those cases in which the eye has been wounded in the front part, and the abnormal changes limited to that portion of the organ. When the whole eyeball evidently is diseased, and especially when there is distension of the sclerotic coat, or general enlargement, "extirpation" is the more adapted.

I perform abscission in this manner. The eyelids having been retracted, I transfix the cornea, or whatever remains of it, or the staphyloma, if there be one, with an ordinary tenaculum, and cut it off with a long and narrow scalpel, gently and quickly. It may be necessary to make the amputation a little behind the cornea, and then the iris, or whatever remains of it, is taken away. When the lens is present, whether opaque or not, it ought to be removed. An attempt should be made by gently manipulating and rapid closing of the eyelids, to save as much as possible of the vitreous humour. I now place a ball of cotton wool or a pledget of lint quickly over the eyelids, maintain it with a bandage, and keep the eye so bound for two or three days. Afterwards, I apply strips of plaster. There is no more important part in the proceeding than this, without which being properly done there may be troublesome bleeding and long convalescence. Healing is effected by the cicatrizing of the surface, and its rapidity depends on the healthiness of the vitreous humour. Among the advantages of "abscission," may be mentioned that it admits of the most perfect adaptation of an artificial eye. This is through the stump that is left.

"Extirpation" should be done within the "ocular sheath" of

the eyeball. For much that is interesting with regard to this sheath or tissue, of which the existence was only made out a few years ago by Dr. O'Ferrall, of Dublin. I beg to refer you to my work on the *Surgical Diseases of the Eye*, second edition. This operation would be called a more brilliant one than "abscission;" and there can be no doubt that, although the proceeding, so far as the practical surgery is concerned, is more prolonged and severe, the recovery may be more rapid, and the general effect on the system perhaps less. Yet I am quite sure that if the patient's ultimate welfare be considered, its adoption should be the rare exception.

I consider this to be the best manner of doing the extirpation. The eyelids having been separated by the silver wire retractor, the conjunctiva is dissected off with forceps and scissors close to its ocular attachment; the recti and oblique muscles then taken up severally with the hook, as in the operation for strabismus, and divided at their insertions; the sheath detached by a probe or hook, from the eyeball, which should now be drawn aside, and the optic nerve cut through. There is generally no bleeding; but should it occur, a compress and bandage must be employed. —*British Med. Journal.*

SOME OF THE EFFECTS OF TOBACCO.

By P. J. FARNSWORTH, M.D., Lyons, Iowa.

Mr. L., aged 35, a plasterer by trade, called at my office Dec. 12, 1861, complaining of sore throat, together with partial anæsthesia of his fingers, toes, and end of his tongue. According to the statement he made to me, he had always been regular and temperate in his habits. He had a wife and four children. He was rather thin, and the noticeable feature about him was a partial anæmic or cachectic look. His appetite was good. As the numbness was not troublesome I thought it might be temporary, and did not at that time attempt any treatment. There was redness of the fauces, and a slight enlargement of the tonsils, for which I used a topical application of a weak solution of nitrate of silver. Dec. 20th, he came again to the office for another application to the throat, complaining still more of numbness. I was then led to make a more careful examination of his case, with a view to find some definite cause for these nervous phenomena. I could find no tenderness either superficial or deep-seated. He had never been troubled with headache,

had had no pain in the lumbar region. There was something in his look that suggested Bright's disease, and I accordingly examined the urine rigidly, but found nothing abnormal. I gave him some simple bitters, with a preparation of iron, and a blister to apply to the spine, between the shoulders, commencing the treatment with a dose of compound cathartic pills.

Jan. 1st, 1862, L. was brought to the office, having previously been able to walk (the distance of five miles). Now the ride was too much for his strength. The numbness was increasing, his appetite was somewhat inordinate, and the tendency to constipation, which previously existed, had increased; he had lost flesh. I again examined the urine without detecting anything. Thinking it might be a miasmatic poisoning, ordered three grains of quinine three times a day, together with a laxative pill to be taken every night. On the 12th of January I was sent for, as his strength had failed, and he was confined to the house. At this time I asked a neighboring practitioner to visit him in consultation. The numbness now seemed pretty general; his eyesight was somewhat affected. The heart beat somewhat irregularly, with a slight anæmic murmur. The tongue was slightly coated. The generative organs were participating in the general weakness; had no erections or sexual desires. Gave him tinct. fer. mur. gutt. x. three times a day, and agreed to the reapplication of the blister to the spine.

I called Jan. 15th, and found the patient in bed, very much dejected, and *smoking*. Having heard us discuss the propriety of blistering, he had applied the blisters to the whole spine, and to the hips. He felt them but little, and was scarcely conscious of their presence, but they had produced an immense drain on the system, and he had failed very fast. I questioned him now about his smoking, and found that he had considered it so small a matter as not to mention it, but that for several years he had smoked the coarsest kind of tobacco in the foulest kind of a pipe, during all his waking hours. On further examination into his case, I was convinced that it was one of poisoning by nicotine. The want of feeling was now general; the motor powers were active enough; he could hold his knife in his hand firmly when his eyes were directly on it, but if he looked away the knife dropped. He walked with difficulty, because he must needs look where his feet fell, as he could not feel them touch the ground. I advised him to stop his smoking at once, and ordered an ounce of brandy and potass. iod. gr. v. three times a day, friction to the surface, and a Dover's powder at night, as he had become very wakeful.

On the third day after I found the patient somewhat improved, but now alarmed at the quantity and quality of his urine; it was very highly charged with a red sediment, which proved to be urea, urate of ammonia, and triple phosphates; with a distinct odor of nicotine. The Dover's powder acted as a diaphoretic, conjoined with the friction; and he complained of a fetid sweat. His wife said that now he had discarded the pipe, the fumes of it were exuding through his skin. Continued the brandy and the potass iod. and gave him tinct. fer. mur. gutt. xx. three times a day. On the 22d inst., I found the patient improving, the urine becoming more natural, but the perspiration was profuse at night, having the same nicotine odor. Sensibility did not return as fast as the strength; he was obliged to use his reason about cold and heat, and in regard to taking food. Cold was scarcely felt, and but little taste was left. Even his exercise had to be regulated by his judgment, and not by his feelings. I continued the tinct. fer. mur. and the potass iod., giving an occasional dose of sulph. magnesia, to move the bowels.

Jan. 29.—The patient still improving, the numbness going of in the same manner that it had come on—passing downwards towards the extremities. I continued the iron, ordered a nourishing diet, the bathing every evening with friction, and an occasional Dover powder.

From that time until March he continued to improve, the numbness having passed to the ends of the fingers and toes, and the end of the tongue. He was then able to walk the five miles to see me; the waxy look had passed off; and the look of health returned. At this time, for experiment sake, he tried to smoke a cigar. It produced nausea and all the feelings that tobacco does to a novice; together with a return of the numbness of the fingers, and a smarting of the fauces.

I consider this as an illustration of the effects of the slow introduction of tobacco poison into the system. I have been unable to find any such effect ascribed to it in any work I have at hand. Dr. Prout, quoted by Pereira, says, "It disorders the assimilating functions in general; but particularly, as I believe, the assimilation, of the saccharine principle. I have never indeed been able to trace the development of oxalic acid to the use of tobacco; but that some analogous and equally poisonous principle (probably of an acid nature) is generated in certain individuals by its abuse, is evident from the cachectic looks, and from the darkened, often greenish-yellow tint of their blood."

Pereira says, "I am not acquainted with any well ascertained ill effects resulting from the habitual use of smoking."

He is probably a lover of the "weed" himself, or had not made close observation of the smokers around him, for it is my opinion that scarcely one in five but that is injured by tobacco. It acts as a nervous sedative or depressant, causing an exhausted feeling at the stomach, and I have good reason to suppose that smoking is the great cause of the universal dyspepsia with which we are troubled.

It sometimes produces tremor of the nerves, and in many cases, instead of being a temporary sedative, destroys the tone of the nerves and produces languor and fretfulness, and often effects like those above described, though not in every case in so marked a degree. In a majority of smokers and chewers of tobacco, it acts like a violent poison, which it is, introduced slowly.—*Amer. Medical Times.*

THE OBSTETRIC BAG.

A DESCRIPTION OF THE INSTRUMENTS USED IN OPERATIVE MIDWIFERY.

A Lecture delivered in St. Thomas's Hospital,

By ROBERT BARNES, M.D.,

Fellow of the Royal College of Physicians, Physician to the Royal Maternity Charity,
Lecturer on Midwifery at St. Thomas's Hospital.

GENTLEMEN:—Before demonstrating the operations which you may be called upon to perform in the practice of midwifery, it will be useful to describe the instruments with which those operations are performed. In no department of surgery is there a greater variety, or a more embarrassing confusion of instruments, than in midwifery. I imagine it is this very confusion, as much as the ambition of appearing original, that has driven many practitioners to devise fresh instruments for their own use. Thus has confusion been worse confounded; and not seldom have men unwitting committed the blunder of inventing over again an instrument which had long been known to others.

The International Exhibition will give you some faint idea of the extent of the modern obstetric armamentarium. An inspection of the surgical instruments sent by the principal makers of Europe may be recommended to every student and practitioner. The observer will be struck, perhaps, at first with the multiplicity of the means contrived for the accomplishment of the same

end. But a more analytical study will suggest to him the further reflection that in this multiplicity of forms of instruments bearing the same names there may lie a deeper purpose and a more instructive lesson. The greater number of the modifications made in the forceps, for example, reveal successive attempts to overcome some difficulty in practice, or even to extend the applications and increase the usefulness of this admirable instrument. You will, again, be led by the examination of the instruments, which are the visible expression of the thoughts of their designers, to inquire into the peculiarities and doctrines of different practitioners and of various schools. It is curious to observe how closely certain primary types of instruments have been preserved in different countries. The straight forceps, with the short handles of Chamberlen, reappears in its essential characters in the instrument of Chapman, Smellie, Denman, and other English teachers; and even cherished by some at the present day. In France, the latest modifications of Dubois and Pajot still bear a striking resemblance to the long forceps with double curve and long handles of Levret. The forceps by birth-right is an English instrument. But it has not been simply naturalized in France. Our continental brethren have impressed upon it a new idea, and made it capable of accomplishing much more than the old English model could do. Then, again, you will see the instruments in the foreign cases which are altogether unknown to English practice—instruments which are not to be procured from our best cutlers at home. There is for example, the cephalotribe, for crushing down the head to dimensions that will admit of dragging through a greatly contracted pelvis. You may think it singular that this powerful and formidable weapon should be needed abroad, and that it should not have been found necessary here. You will turn to the instruments used in England to overcome those difficulties which, on the continent generally, are encountered by other means. This comparative study will, in this and many other ways, prove exceedingly interesting and instructive. I cannot enter into it fully now, as my immediate duty is to explain to you the construction and uses of the several pieces of such a selection of instruments as I have found to be best adapted for the exigencies of practice.

And first of all I would say a few words about that most essential and most universally applicable obstetric instrument, the human hand. In ordinary labor of course it is the only instrument required; but it is also the sole instrument called for in many of the greatest difficulties that occur in obstetric practice. In malpresentations—in many cases of contracted or deformed

pelvis—in not a few cases where, after craniotomy, the erotchet and craniotomy forceps have failed to deliver—the bare hand affords a safe and ready extrication.

I believe that if manual dexterity were more cultivated than it is, lives that are now lost would be saved, and certainly many tedious and dangerous instrumental operations would be avoided. It would be both instructive and curious to carry our minds back to the days when the forceps and other obstetric instruments were unknown, and to confront the problem which our predecessors—such men as Ambroise, Pare, Guillemeau, and others—had to solve: namely, how to deliver a woman with a deformed pelvis without instruments. That they did accomplish in many instances with the unarmed hand what we now do by the aid of various weapons there can be no doubt. If this implies greater poverty of resources on their part, it not the less implies also greater manual skill. I am confident that the possession of instruments, especially of the craniotomy instruments, has led within the last century, to a neglect of the proper uses of the hands, which is much to be deplored. Indeed, it may be said that the more certain instruments are perfected, the more they will be trusted and resorted to, until we are in danger of greatly exaggerating their value. The question is not merely one of choice between two methods of obtaining the same end; it is frequently one between life and death. The perforator and erotchet for example, kill the child, where the hand would sometimes save it, and that without adding to the mother's risk. I say it deliberately, after no mean experience in obstetric operations, that what is most wanted at the present day is not the improvement or invention of instruments, but a more careful and scientific cultivation of the powers of the hand, and a judicious selection of the best models of existing instruments.

Obstetric surgery has this peculiarity: its operations are carried on in the dark, our only guide being the information conveyed by the sense of touch. The mind's eye travels on the fingers' ends. The hand thus possesses an inestimable superiority over all over instruments. Its every movement is regulated by consciousness. If used with ordinary discretion and skill, it can hardly inflict injury.

After expending a world of ingenuity upon the invention and perfecting of obstetric instruments, it is time to ascend a little the stream of knowledge, and to endeavor to recover from the teaching of our forefathers their secret of *chirurgery*; to regain, if not to extend, that power over the great instrument which is

the surgeon's most trusty aid, and from which he derives his name.

In providing yourselves with a set of instruments, I would recommend you to discard the old rolling up leathern case, or *trousseau*. It is an inconvenient contrivance. It only carries a restricted number of things. I find a modification of the travelling leather bag far more useful. It will carry not only the selected instruments ordinarily required, but you can always put anything else in it that may be specially indicated. It will hold bottles; serve to bring away pathological specimens. In short, it makes a perfect accoucheur's vade-mecum. And if you turn out the obstetric furniture, you have a traveling bag again. The following is a list of the ordinary furniture of the Obstetric Bag:—

1. A pair of long double-curved forceps.
2. A craniotome, or perforator.
3. A crotchet.
4. A craniotomy forceps.
5. A blunt-ended straight bistoury, with a cutting edge of three-quarters of an inch, to incise the os uteri in cases of extreme contraction or cicatrization.
6. A Higginson's syringe, fitted on my plan, with a long uterine tube, which serves for the injection of iced water, etc., to arrest hæmorrhage, and also serves to expand.
7. A set of my caoutchouc uterine dilators, for the induction of premature labor, and the acceleration of labor, as in cases of placenta prævia, convulsions, etc.
8. A flexible male catheter. (The short silver female catheter is often useless, and is generally less convenient than the flexible male catheter.)
9. A pair of scissors.
10. Thread.
11. Some yards of tape.

Medicines.

- | | |
|---------------------------------------|----------------------|
| 1. Chloroform and inhaler. | 3. Hofman's anodyne. |
| 2. Laudanum. | 4. Ergot of Rye. |
| 5. A solution of perchloride of iron. | |

The medicines can be fitted in small pockets at the upper part of the bag.

These are the things always kept in my bag ready for use. If you should want anything else, the bag will hold it.

I will now say a few words in explanation of the construction and uses of some of the instruments enumerated:

The Forceps.—Next to a skilful hand, the possession of a good forceps is of the greatest importance to the practitioner of midwifery. A good forceps is in many cases a substitute for the perforator; and in many others it may save the mother hours of torture, and the dangers that attend upon protracted labor. Those who restrict themselves to the use of the short forceps, or even to a long forceps with the single or cranial curve, must inevitably expose many patients to the dangers of flooding, of convulsions, of protracted labor, of jamming the lower segment of the uterus between the child's head and the sharp pelvic brim; or, to obviate these perils to the mother, they must sacrifice her child. Every one will grant that craniotomy is the confession of the impotency of our art to save. It ought to be regarded as the last resource. Every effort should be made to improve these instruments and operations which obviate the necessity of resorting to this cruel alternative of destroying the child. The success of these saving operations often, indeed, depends upon good instruments being skilfully employed. Without indulging in the flattering hope that craniotomy will ever be exploded, still I do think that the degree to which this brutal operation shall be minimized must be accepted as a measure of the improvement of obstetric surgery. The great agent of this reduction must be the forceps. And to answer the indications fully, this instrument must be of sufficient length and properly curved to reach the head arrested on the brim of the pelvis, and of sufficient power to arrest some compressive action upon the foetal head to bring it through a moderately contracted space. If you will look at the French forceps, you will understand how it is that in France craniotomy is so rare, and why they pass at once from the forceps to the cephalotribe—an instrument so formidable that it seems only adapted for the most extreme cases of disproportion. Do they never witness abroad those minor degrees of disproportion in which, here, craniotomy is resorted to? Certainly such cases must and do occur. The inference we must draw is, that the forceps is made to do the work of the perforator; that by means of this instrument our brethren in France are enabled to rescue from the perforator a large class of intermediate cases ranging between the normal proportions and the extreme disproportions which call for the cephalotribe or the Cæsarean section.

The French forceps, with its powerful blades and long handles, present a formidable appearance to eyes accustomed to the small, single-handed forceps of this country. If, however, I should ever be tempted to lay aside an instrument which has

served me well on many occasions, it will probably be to take up the improved forceps of Dubois or that of Pajot. The great bugbear of English operative midwifery is the absurd dread of possessing powerful instruments. Thus the blades of the forceps are made straight and short; the lock is placed close to the bow of the blades, and the handles are so short that they can only be grasped with one hand—all to carry out the idea that to make a safe instrument, it must be weak or powerless. There is no greater error than this. In the first place, a weak instrument is, by the mere fact of its weakness, restricted to a very limited class of cases. In the second place, if the instrument is weak, it calls for more muscular force on the part of the operator. Now, it is sometimes necessary to keep up a considerable degree of force for some time, and not seldom in a constrained position. Fatigue follows; the operator's muscles become unsteady; the hand loses its nicety of diagnostic touch, and that exactly balanced control over its movements which it is so important to preserve. Under these circumstances, he soon comes to the conclusion that he has used all the force that is justifiable; that the case is not fitted for the forceps, and takes up the horrid perforator; or he runs the risk of doing that mischief to avoid which his forceps was made weak. It is a transparent fallacy to conclude that an instrument is dangerous because it is powerful. If you have an excess of power, your need not use it; certainly you need not abuse it. Would it not be ridiculous to bring down the power of a man to the puny, unsteady strength of a boy, when there is work requiring power and skill to be done? Having force to spare, it is more easy to regulate the amount of force you employ; you gain more perfect command over your instrument; you need never exhaust your own muscular power. The golden rule in midwifery, as in all other affairs, is never to expend unnecessary force. The steam-hammer will strike with a force of many tons when its duty is to weld bars of iron into one mass; but when called upon to crack a nut, it will just break the shell without bruising the kernel. So in obstetric operations you will so exactly graduate the force at your disposal as to effect your purpose and nothing more. This faculty of accurate graduation depends, I repeat, upon having a reserve of force. Violence is the fault of struggling feebleness, not of conscious power. Moderation must emanate from the will of the operator; it must not be looked for from the imperfection of his instruments. One of the most valuable features of the French forceps is the length of the handles, which admits of grasping by both hands at once. It does not follow that, because of this

facility, you are to throw the whole strength of both arms into the work of compression and extraction. The true use of a two-handled instrument is to enable one hand to assist, to relieve, to steady the other. By alternate action, the hands get rest, the muscles preserve their tone, and that accurate sense of resistance which is necessary to guide the surgeon in measuring the degree of force that is called for, or to warn him when to desist. The instrument I now show you, which I have used exclusively for several years, although less powerful than the French forceps, answers similar indications. It is, as I believe, as regards the form of the blades, the forceps of Mr. Robertson, of Manchester; but instrument-makers tell me that my instrument is different in other respects. The blades are double-curved, but both the pelvic and the cranial curves are slight; the length of the arc of the cranial bow is seven inches, thus adapting it to that elongation of the foetal cranium which is commonly the result of slight pelvic contraction and protracted labor; then there is a straight shank an inch and a-half long, and a semicircular bow, the arc or diameter of which is also an inch and a-half long. This half circle in each blade, when opposed to its fellow, makes a ring. This ring is immediately in front of the lock. The lock is the commencement of the handles, which are four inches and a-quarter long. The handles might be lengthened with advantage. The straight shank and the ring make together a length of three inches between the springing of the bow and the lock. This effectually clears the lock from all risk of entanglement with the labia or perineum. The ring offers a most convenient hold for the forefinger, whilst the handle can be grasped either with the remainder of the same hand, or with the other hand. You have thus essentially a two-handed instrument, which can be worked with great nicety and economy of muscular force. This forceps is equally adapted for arrest at the brim, in the cavity, or near the outlet of the pelvis. It is quite superfluous to encumber yourselves with more than one instrument. If you consider that this forceps is made to seize a head above the brim, and to bring it down through the entire pelvic canal, you will see that it is of necessity fitted for application at any lower point of the pelvis. There are two more practical advantages possessed by this instrument: it adds nothing whatever to the risk of laceration to the perineum—a risk which is very serious with the straight forceps; owing to the pelvic curve, the upper or right blade can be introduced without dragging the patient's nates out of bed, or over the edge. The application of the instrument, indeed, requires very little disturbance of the patient.

You thus avoid inflicting that terror which attends troublesome preparations. I have saved many children with this forceps, who had been otherwise doomed to perish by craniotomy. I have never seen injury inflicted by it upon the mother, as I have seen by the short forceps even in skilful hands. I entertain a confident opinion that the short straight forceps is destined to disappear from obstetric practice.

The Craniotomy Instruments.—Many perforators and craniotomy-forceps employed are very defective. The perforators will not perforate, and the forceps will not hold. The point of the perforator should be straight. To curve the point is to throw the force out of its proper line. The shank should be long, not less than seven inches, to enable the point to reach above the brim of the pelvis, whilst the handles are clear of the external parts. The shanks should diverge well, so as to admit the entire hand between the handles. Here, again, you will find the advantage of power in the instrument. It is the surest safeguard against slipping, against failure, against injuring the mother. This form of instrument was recommended to me by Dr. Oldham. It answers its purpose thoroughly. The best crotchet is that used in the Dublin Lying-in Hospital. I think that extraction by the craniotomy-forceps is generally preferable; but then you must have a good forceps. I can understand that having to choose between a good crotchet and a bad craniotomy-forceps the preference should be given to the former. The craniotomy-forceps I show you is an excellent and powerful instrument. It is a modification made by Messrs. Weiss, under my direction of the instruments of Professors Simpson and Murphy. The blades can either be introduced singly or as one instrument; but, in truth, this forceps is very rarely called for. In the first place, craniotomy ought to be rare; and, in the second place, I have often found it far more easy and expeditious to deliver a child after perforation by turning than by the crotchet or forceps.

What I have said to-day is for the express purpose of assisting in the selection of a good set of obstetric instruments. I am sure I have more frequently seen practitioners fail in operations they have undertaken from want of good models of instruments than from want of skill. Hence the importance I attach to this point. The mode of using the instrument I shall demonstrate hereafter.—*London Lancet.*

Editorial.

MEDICAL DEPARTMENT OF LIND UNIVERSITY.

The regular annual course of lectures in this Institution commenced on Monday evening, Oct. 13, 1862, with a general introductory lecture, by Prof. R. N. ISHAM. The lecture room was well filled with an appreciative audience, who listened to the lecture with much interest and pleasure. The lecture was well written, its sentiments strictly appropriate to the occasion, and well calculated to impress the mind of the student with a proper appreciation of the importance of his undertaking, and to inspire him with a laudable ambition to make himself an honor to the profession and a blessing to the community. At the close of the lecture, Prof. JOHNSON, president of the Faculty, explained such changes as had been made necessary on account of the continued absence of one or two members as surgeons in the army. The full course on general pathology and public hygiene will be given by Dr. WING, one the members of the State Board of Medical Examiners, a true gentleman, a ripe scholar, and fully competent to do justice to the task he has undertaken. DAVID RUTTER, M.D., emeritus professor of obstetrics, will add to the interest in the department of midwifery and diseases of females, by giving one lecture per week throughout the term. In addition to the four regular clinics in the Mercy Hospital and two in the College Dispensary, Prof. ISHAM will give a full clinical course on syphilis and syphilitic diseases in the Marine Hospital, occupying every Saturday morning. The following is the complete programme for the present College term:—

JUNIOR COURSE.

	MONDAY.	TUESDAY.	WED'SDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 A.M.	Johnson,	Johnson,	Johnson,	Johnson,	Johnson,	
10 A.M.	Wing,	Wing,	Wing,	Mahla,	Mahla,	
11 A.M.	Hollister,	Hollister,	Hollister,	Hollister,	Hollister,	Mahla.
12 M.	Jewell,	Jewell,	Jewell,	Jewell,	Jewell,	

SENIOR COURSE.

	MONDAY.	TUESDAY.	WEDSDAY.	THURSDAY.	FRIDAY.	SATURDAY.
2 P.M.	Byford,	Byford,	Clinic,	Byford,	Byford,	Clinic.
3 P.M.	Isham,	Isham,	Isham,	Isham,	Isham,	
4 P.M.	Mahla,	Mahla,	Mahla,	Rutter,	Spafford,	
5 P.M.	Davis,	Davis,	Davis,	Davis,	Davis,	

Mercy Hospital Clinic, 8 A. M. Monday, Tuesday, Thursday, and Friday.

Marine " " 8 A. M. Saturday.

College, " " 2 P. M. Wednesday and Saturday.

“IS ALCOHOL FOOD?”—We find in a recent number of the *London Lancet*, a summary or abstract of a paper read at the Annual Meeting of the British Medical Association, Aug. 8th, 1862; by THOMAS INMAN, M.D., Physician to the Liverpool Royal Infirmary, on the above subject. The following are the conclusions of the author:—

1. Nature has provided in the salivary glands, the liver, and the lungs of every mammal an apparatus for converting all food, especially farinaceous, into alcohol; and we have no evidence that such conversion does not take place.

2. One form of alcohol or another is available for the support of life, and for restoration to health when no ordinary food can be or is digested.

3. Alcohol, after being taken, is incorporated with the blood, passes into the various tissues, and ultimately disappears, a small portion only passing away in the breath. We can say no more of bread, potatoes, or oatmeal porridge, a small portion of each of which passes out of the body with the feces.

4. Alcohol, in the form of ale, porter, wine, etc., relieves hunger and quenches thirst simultaneously, and with a completeness that is not equalled by water, infusion of gentian, cayenne pepper, or by turpentine—i.e., it does not act as water simply, or as a stimulant alone.

5. Wine, beer, etc., satisfy the appetite when taken alone, and act for the time as any solid food would do.

6. When alcohol is mingled with other food, a less amount of the latter suffices for the wants of the system than if water had been used as the drink.

7. The various forms in which alcohol is taken have as marked and specific effects as have animal and vegetable articles of diet.

8. Individuals have subsisted wholly upon one or the other of the various forms of alcohol in common use for periods of great

length; and as it is illogical to conclude that they must have lived on air, without food, or on flies, like chameleons, the conclusion is irresistible.

What that conclusion is, it might be left for every thinking man to decide.

In regard to the first of these propositions, we find nothing in the paper or elsewhere to show why the author might not have said with equal propriety that, "Nature has provided in the salivary glands, the liver, and the lungs of every mammal an apparatus for converting all food, especially farinaceous, into" *soap* or *vinegar* as into "alcohol." It seems to be a simple assertion without the slightest positive proof for its support.

Neither is the negative assertion made in the closing sentence of the proposition true; for we have evidence in abundance, that no such conversion of food into alcohol ever takes place in the healthy state of the animal economy.

1st. The numerous rigid and elaborate analysis of healthy blood, made by different chemists, have entirely failed to detect any such substance as alcohol in that fluid, whether arterial or venous.

2d. There is nothing in the known composition or properties of the fluids furnished by the salivary glands, the liver, or the lungs calculated to produce vinous fermentation.

3d. The eating of any quantity of the *ferinaceous* food has never been known to produce any of the peculiar exhilarating effects of alcohol. Did Dr. INMAN ever see a man intoxicated from drinking simple syrup, or eating any quantity of sugar, starch, or gum?—And yet if "nature" has provided the digestive and pulmonary organs "for converting all food, *especially farinaceous, into alcohol*," why does not the son of Erin get just as *tipsy* at a suitable time after a breakfast of potatoes, as after a glass of whiskey?—The second and third propositions contain nothing that might not be said with equal propriety of any other valuable medicinal agent.

The intimation that only a small part of the alcohol taken, is ever eliminated from the system unchanged, though disproved by the recent experiments of LALLEMAND and others, yet if it

was true, affords no proof that the retained alcohol acts as food for nourishing the tissues.

Opium, mercury, arsenic, etc., are also taken into the blood, and pass into the various tissues, and no one has yet demonstrated that all of these substances reappear unchanged in any of the secretions. But shall we therefore conclude that opium, mercury, and arsenic are equivalent to food?

Such a conclusion would be just as logical and philosophical as that involved in the third proposition of the author.

The assertion in the fourth proposition that "ale, porter, wine, etc., relieve hunger and quench thirst simultaneously, and with a completeness that is not equalled by water, is partly true and partly false. It is true that the addition of alcohol to the water will relieve the sense of hunger more than clear water; and so will opium, ether, chloroform, or any other agent capable of producing an anodyne or anesthetic effect on the nervous system. But that it will quench thirst more perfectly or for a longer period than pure water is contradicted by every day's observation; for certainly there is no class of persons who call for drink more frequently or more urgently than those who drink fermented or distilled liquors.

The fifth, sixth, and seventh propositions are of the same vague and unsatisfactory character as the preceding.

The assertion in the eighth proposition, that "Individuals have subsisted wholly upon one or other of the various forms of alcohol in common use, for periods of great length;" leaving it as a necessary inference that it must consequently have acted as food, is altogether unsatisfactory. How long does the author mean by "periods of great length?" Is it three weeks, three months, or three years? Again, "one or other of the various forms of alcohol in common use," is rather indefinite.

It is well known that most of the fermented drinks as they are commonly used, contain a small quantity of matter capable of acting as nourishment aside from the alcohol. Hence, if an individual supplied with those drinks should live longer than one supplied with pure water only, it would not prove that the alcohol either acted as food or was the cause of the prolongation

of life. When Dr. INMAN will show by any well-conducted series of experiments, that a single drop of alcohol is actually produced or generated in any organ, structure, or secretion of the healthy human body; or that any quantity of alcohol taken into the system from without actually furnishes organic atoms for the nourishment of any structure, then he will have done something towards settling the vexed question whether "Alcohol is food." Alcohol is an agent possessed of well-known and easily recognized properties. Its presence in any of the fluids or solids of the human body is easy of detection by the proper tests. These fluids and solids have been examined and analyzed again and again, by the most eminent chemists and chemico-physiologists of all countries; but in no instance have they found a drop of alcohol, unless it had been previously introduced into the system from without. If "nature" had really "provided in the salivary glands, the liver, and the lungs of every mammal an apparatus for converting all food, especially farinaceous, into alcohol," would not some of these analytical investigators have detected, at least, traces of the existence of this well-known agent? And do not the uniformly negative results of all analysis, so far as regards the presence of alcohol afford *some* "evidence that such conversion (as food into alcohol) does *not* take place," in the living system? In fact, does not every intelligent student of physical science know, that alcohol is never the product of any living vital action in any part of either the animal or vegetable kingdoms of the universe; but is solely the product of destructive decomposition or fermentation taking place in inanimate or dead matter?

In the name of science and common sense, we ask when there will be an end of such loose, illogical, and dogmatic conclusions as those put forth by Dr. INMAN, concerning the conversion of food into alcohol or alcohol into nutritive matter for the tissues? In the popular mind, alcohol has long been the guardian angel with the flaming sword turning every way to guard the tree of life. According to the popular notions, it is equally efficacious in protecting the human system against the cold of winter and the heat of summer; against the dry and scorching air of the

desert and the fogs and vapors of the marsh, etc., etc.; and, at the present time, it has well nigh reached the same ubiquitous position in the professional mind. We are told to give it in the water we drink to prevent disease; to give it in the active phlegmasia as acute pneumonia; to give it still more largely in the low typhoidal forms of disease; to give it as a medicine; to give it as food; to give it as a preventive before disease begins; to give it as a curative when disease exists; to give it as nourishment after the disease has left; and, finally, Dr. INMAN gravely tells us that the digestive organs simply constitute an apparatus for converting *all food* into alcohol. What a happy thing it would be for the human race if, taking this proposition of Dr. INMAN to be true, that all food, and especially farinaceous, is converted into alcohol by the digestive organs, they would act upon the legitimate practical inference, that it would do just as well to eat a dish of rice or potatoes or drink a cup of molasses, as to drink a glass of wine or whiskey.

RESIGNATION OF ARMY SURGEONS.—We learn that several of the more eminent and experienced surgeons in the volunteer part of the army have resigned. Among them we notice the familiar names of Dr. CROSBY, of New Hampshire, and Dr. D. PRINCE, of this State. Both had occupied the position of Brigade-Surgeon; and both had maintained a high reputation on the field of active service. They will be cordially welcomed by their hosts of friends at home; yet our army can hardly afford to lose the services of such men at the present time.

ARTIFICIAL LIMBS FOR SOLDIERS.—The last Congress appropriated a fund for supplying artificial limbs to maimed soldiers; and the surgeon-general appointed a commission to devise a proper method of expending the same. This commission, consisting of Drs. VAN BUREN, GROSS, J. M. WARREN, and SATTERLEE, has decided to allow each patient fifty dollars for a lower and twenty-five dollars for an upper extremity. The same commission selected as manufacturers of artificial limbs, Drs. E. D. Hudson, Douglas Bly, and Mr. Selpho, of New York; Mr. Doug-

las, of Springfield, Mass.; and Mr. Palmer, of Philadelphia. Patients needing artificial limbs can apply to either of these men, and obtain the amount of pecuniary aid mentioned above.

DR. JOHN C. CHEESEMAN, an eminent surgeon of New York City, died Oct. 11th, 1862, in the 75th year of his age. He was for many years one of the surgeons to the New York Hospital, and a trustee of the College of Physicians and Surgeons.

HOSPITAL INSPECTION.—DRS. BOWDITCH and ELLIS, of Boston, are already engaged in the work of inspection of our army hospitals, under the direction of Sanitary Commission. We think they are faithful and good men for the work.

EDITOR MEDICAL EXAMINER:—In reply to a scurrilous article in the September Number of the *Medical Journal*, evidently intended for me, I simply state that self-respect forbids me to write another word in this controversy. Leaving the whole matter to the calm judgment of the enlightened members of the profession. I remain, Mr. Editor, very respectfully,

R. ROSKOTEN.

PHYSICIAN'S HAND-BOOK OF PRACTICE FOR 1862: By WILLIAM ELMER, M.D.
New York: W. A. TOWNSEND, Publisher, 39 Walker Street.

The contents of this pocket memorandum and day-book for the physician, are as follows, viz.: Calender for the year 1863; Classification of Diseases; Dr. Marshall Hall's Ready Method; Medicinal Weights and Measures; Abbreviations of Medical Properties and Remedies; List of Remedial Agents; Balnea Medicata; List of Incompatibles; Remarks on the Writing of Prescriptions; Examples of Extemporaneous Prescriptions; Poisons and their Antidotes; Diagnostic Examination of the Urine; The Pulse:—Table of, and other Characters; Explanation of Signs, etc., to be used in the Record; Names and Addresses, Bills, and Accounts; Record of Practice and Treatment; Obstetric Calender; Obstetric Record, Blanks; Wants and General Memoranda; Nurses.

PHYSICIAN'S POCKET MEMORANDUM: For 1863. By C. H. CLEVELAND, M.D.
Cincinnati: BRADLEY & WEBB, Printers.

The contents of this work are as follows: Preface; List of Medicines and Classification; Medicines not Classified; Abbreviations used in Prescriptions; Accidents and Emergencies; Poisons and Antidotes; Post Mortems; Preservation and Embalming; Prescription of Medicines; Signs used in Record of Practice; Memoranda of Practice; General Memoranda.

EXPERIMENTS ON THE FORMATION OF INFUSORIA IN BOILED SOLUTIONS OF ORGANIC MATTER, ENCLOSED IN HERMETICALLY SEALED VESSELS, AND SUPPLIED WITH PURE AIR.—Dr. Jeffries Wayman relates (*American Journal of Science*, July, 1862,) some very ingenious and interesting experiments to elucidate this subject.

Pasteur, in his admirable researches on fermentation, has brought forward experimental evidence to show that this process depends upon the presence of minute organisms in the fermenting fluid, and that the source of all such organisms is the atmosphere. In support of this opinion he asserts, that when a fluid containing organic matter in solution is put into a flask, and "boiled two or three minutes," and supplied only with air which has been filtered by passing through a tube heated to redness, and the flask is then hermetically sealed, no fermentation takes place, no organisms are formed, and that the contents remain indefinitely without change. But if the same solution is exposed to the air in its ordinary condition, it becomes filled with various living forms. Out of a large number of experiments prepared in the manner above described, he has not known one to give a different result from that mentioned. He further states that if the neck of the flask is drawn out into a very slender curved tube of several inches in length, the contents boiled, and then allowed to cool without the end of the tube being closed, so that the air enters at the ordinary temperature, and has free access to the interior of the flask, even then no fermentation takes place, and no organisms appear. His explanation of this is, that the air which enters first, meets with the hot steam, and the spores or organisms contained in it are killed; while those which enter the tube later move more slowly, and are deposited on the moist walls of it without entering the body of the flask.

The results of Dr. Wyman's experiments have been quite dif-

ferent, and living organisms have made their appearance, in some instances, where even greater precautions were taken than those mentioned by Pasteur. "The boiled solutions of organic matter made use of," by Dr. W., "exposed only to air in hermetically sealed vessels, and exposed to boiling water, became the seat of infusorial life.

These experiments, Dr. W. observes, "throw but little light on the immediate source from which the organisms in question have been derived. Those who reject the doctrine of spontaneous generation in any of the forms in which it has been brought forward, will ascribe them to spores contained either in the air enclosed in the flask, or in the materials of the solution. In support of this view it may be asserted, that it has been proved by the microscopical investigations of Quatrefages, Robin, Pouchet, Pasteur, and others, that the air contains various kinds of organic matter, consisting of minute fragments of dead animals and plants, also the spores of cryptogamous plants, and certain other forms, the appearance of which, as Quatrefages says, suggests that they are eggs. We have made some examinations of our own on this subject, but it would be unnecessary to give the results in detail. We will simply state, that we have carefully examined the dust deposited in attics, also that floating in the air collected on plates of glass covered with glycerine, and have found in such dust, in addition to the debris of animal and vegetable tissues, which last were by far in the greatest abundance, the spores of Cryptogams, some closely resembling those of Conferoid plants, and with them, but much less frequently, what appeared to be the eggs of some of the invertebrate animals, though we were unable to identify them with those of any particular species. We have also found grains of starch in both kinds of dust examined, to the presence of which Pouchet was the first to call attention. When compared with the whole quantity of dust examined, or even with the whole quantity of organic matter, both eggs and spores may be said to be of rare occurrence. We have not in any instance detected dried animalcules which were resuscitated by moisture, and when the dust has been macerated in water, none have appeared until several days afterwards, until after a lapse of time, when they would ordinarily appear in any organic solution.

"Those who advocate the theory of spontaneous generation, on the other hand, will doubtless find, in the experiments here recorded, evidence in support of their views. While they admit that spores and minute eggs are disseminated through the air, they assert that no spores or eggs of any kind have been actu-

ally proved by experiment to resist the prolonged action of boiling water. As regards Vibrios, Baeteriums, Spirillums, etc., it has not yet been shown that they have spores; the existence of them is simply inferred from analogy. It is certain that Vibrios are killed by being immersed in water, the temperature of which does not exceed 200° F. We have found all motion, except the Brownian, to cease even at 180° F. We have also proved by several experiments that the spores of common mould are killed, both by being exposed to steam, and by passing through the heated tube used in the experiments described in this article. If, on the one hand, it is urged that all organisms, in so far as the early history of them is known, are derived from ova, and therefore from analogy, we must ascribe a similar origin to these minute beings whose early history we do not know, it may be urged with equal force, on the other hand, that all ova and spores, in so far as we know anything about them, are destroyed by prolonged boiling: therefore, from analogy we are equally bound to infer that Vibrios, Baeteriums, etc., could not have been derived from ova, since these would all have been destroyed by the conditions to which they have been subjected. The argument from analogy is as strong in the one case as in the other.—*Amer. Jour. Med. Sciences.*

INVERSION OF THE UTERUS OCCURRING SPONTANEOUSLY EIGHTY HOURS AFTER DELIVERY.—Some obstetricians believe that inversion of the uterus is always the result of some cause over which the attendant has control, and that in most cases it is caused by undue traction on the cord. Dr. Radford, however, has clearly established that it may occur spontaneously without any fault of the midwife's, and that it may occur not only immediately after delivery, but also after an interval of some days. Mr. Charles Cowan relates (*Edinburgh Medical Journal*, June, 1862,) a case which is conclusive as to this point.

The subject of it was a lady, 40 years of age, always in the enjoyment of good health, who was delivered with the forceps, after a pretty smart labor of 24 hours' duration, of her first child, a strong healthy boy, at 4 A.M., on Thursday, the 15th November, 1861. The placenta was found in the vagina, ten minutes afterwards, and removed. In about half an hour there was slight hemorrhage, which was easily restrained by the application of cold to the pubic region, which caused the uterus to contract firmly: a little brandy was likewise administered, as I attributed the hemorrhage to the weak state of the patient, occasioned by the protracted labor, and by my efforts to accomplish

delivery with the forceps, which occupied me more than half an hour.

I remained with her half an hour longer; and to satisfy myself that all was right I removed the bandage, and, on manipulating the abdomen, I discovered the uterus firmly contracted, about the size of a cricket ball, in its normal situation. The bandage having been replaced I administered a dose of morphia, and took my leave.

For the first three days after her confinement, we had the patient giving the most satisfactory evidence of speedily attaining convalescence. The pulse becomes natural; the appetite returns; the secretions are normal; the breasts are distended with milk, and the mother rejoices in the prospect of being able to nurse her child. Her sister finding her so well on the Saturday afternoon, (two days and a-half after delivery), returns home, and on the Sunday the patient expresses a wish to get up. What could be more gratifying than this? What could more strongly indicate a rapid restoration to health? So far it appears that all is well; but on Sunday at mid-day, about 80 hours after delivery, a change takes place. Eager to test her strength she leaps out of bed, comes to the ground with some degree of violence, staggers to the fireplace, and falls into a chair in a state of syncope.

There had undoubtedly been mischief, and that of no light character, for from this moment a train of symptoms of the most alarming description followed, becoming hourly more and more serious, until the cause was discovered in the inversion of the uterus, and replacement was accomplished. She now again began to show some slight signs of amendment; and we cannot but conclude that the inversion was occasioned by the hurried leap out of bed, especially as the unfavorable symptoms presented themselves then for the first time; and we have further proof of this in the amelioration of these symptoms, commencing almost as soon as the displacement of the uterus was reduced.—*Amer. Jour. Med. Sciences.*

RESEARCHES ON THE INFLUENCE OF CULINARY SALT AND COFFEE ON THE METAMORPHOSIS OF TISSUE.—Culinary salt, according to the researches of C. Voit, is a powerful stimulator of the metamorphosis of tissue; it increases, by means of its physical properties, the capillary circulation of fluids in the organism; it increases the oxidation of albumen, and through this the quantity of urica excreted. Culinary salt is also a true diuretic. In order to excrete the salt from the body, water is re-

quired; this water passes always through the kidneys, (the only channel for the excretion of culinary salt in the dog,) and is, if the supply of water from without is limited, abstracted from the tissues.

Voit's experiments with *coffee* on a dog led to the inference that coffee does not, as is usually assumed, diminish the metamorphosis of nitrogenous tissue, and the excretion of urea, but, on the contrary, rather increases these processes. On the whole, the dog appeared to be more lively after the use of coffee. The author made also experiments with *coffein* on frogs, and found it to cause, at first, increased irritability of the nervous system, a tendency to reflex-movements and to tetanic convulsions; later, however, phenomena of paralysis. The pupil becomes dilated; the capillary vessels are filled with blood; the heart's contractions are at first increased, later reduced in frequency, they are arrested during the tetanic paroxysms. The author attributes the principal effects of coffee to its action on the nervous system, not to its influence on the tissue-change. The nervous system being rendered more susceptible, the same exciting cause produces a greater effect. Coffee thus refreshes, Voit thinks, the fatigued body, renders the lassitude less perceptible, and in this manner enables us to endure prolonged exertion. The experiments on the influence of *bodily exercise* (treadwheel) on the tissue-change in the well-known dog lead to the unexpected result, that the excretion of urea was not at all, or only very slightly, increased by bodily labor. Voit infers, therefore, that muscular action does not cause increased decomposition of albuminous substances, while it is accompanied with a greater consumption of fat. As the decomposition of albumen is not the source of the production of force, connected with muscular contraction, Voit is inclined to look for it in the development of electricity.—*Brit. and For. Med. and Surg. Journal*, July, 1862.

VARICOSE ULCERS OF THE LEG.—In a paper read before the Midland Medical Society, J. H. Houghton, surgeon to the Dudley Dispensary, advocates the use of the flannel bandage suggested by Mr. Hunt, in 1857. Cases looked upon as next to incurable, can be managed, with this treatment, without difficulty, and a speedy cure is effected without confinement, or the patient's relinquishing his usual occupation. The wound is strapped with a few strips of soap-plaster, or dressed with some simple dressing, and the bandage applied by first making one turn round the bottom of the leg, then one under the sole of the

foot, over the instep, round the back of the foot, again over the instep, till the lower edge of the bandage passes round the foot at the root of the toes, about two turns more round the foot, and then spirally up the leg to the knee. The roller naturally follows this course, and requires no turn till it reaches the calf; if properly applied, it will lie quite even and remain immovable for an indefinite period. In some cases, the patients walked twice a-week nine and twelve miles to have the leg dressed, and followed their usual occupations all the time. Quinine and iron, sarsaparilla and iodide of potassium, etc., are given internally, where indicated. A material called "domette" seems to be preferable to flannel. The roller must be accurately made two and a-half inches wide, and in one piece, eight yards long. The success of the treatment is confirmed by I. K. Spender and H. Crisp, in the *British Medical Journal*. The former recommends, in the place of the soap-plaster, an ointment containing a large quantity of an alkaline earth, as chalk, spread thickly on lint, or the compound lead-plaster of the Pharmacopœia. Mr. Mitchell, of the Lancaster Infirmary, gives in the *Lancet* the following directions for treating old indolent ulcers. First wash the leg well, then fill the ulcer with finely powdered carbonate of iron, and apply a large linen pad, excluding all moisture; then envelop the whole limb in a starched bandage, for about three weeks. The patient may walk a little every day.—*Amer. Med. Times*.

THE LIVER IN CHOLERA INFANTUM.—Dr. J. Lewis Smith, Curator of the Nursery and Child's Hospital, has published (*American Medical Times*, Sept. 20th, 1862,) some interesting investigations which confirm the prevalent belief that the liver plays an insignificant part in the pathology of the summer complaint of children. "The green stools," he justly remarks, "which have long been referred to the biliary secretion, must be mainly due to causes operating in the intestines, for I have repeatedly noticed that the green color does not appear till we reach the lower part of the jejunum, or upper part of the ileum. Examined under the microscope the green matter is found to be in little fragments or masses, as if produced in the crypts of the intestines."

Dr. S. gives the result of the *post mortem* appearance of the liver in 37 cases. No evidence is afforded by these of any congestion, or torpidity, or hyperactivity, or perverted secretion, or abnormal size of the liver. "In most of the cases the liver was examined microscopically, and the only fact worthy of note

observed was the variable amount of fatty matter. Sometimes it was in excess, sometimes in moderate quantity, or rather deficient, and sometimes, apparently, in greater amount in one portion of the organ than in others."

MEDICAL COUNCIL OF GREAT BRITAIN.—The doings of this council, from which so much was expected, seems not to have been satisfactory. Its attempts to regulate and improve medical education, and to purge the profession from unworthy members, have been failures; and its new pharmacopœia, which has cost heavily in time and money, is now under protest, in consequence of the council committing the blunder of introducing new weights and measures, which it is contended would create great confusion.

A DOLLAR THAT PAYS WELL.

One of the best seasonable enterprises, now before the public, is that of the Publisher of the *American Agriculturist*. He has secured for his subscribers fine colored editions of the splendid Maps of localities of great interest. One of these covering a space of more than *ten square feet*, shows the entire State of VIRGINIA, so completely that every county, town, city, village, river, brook, mountain, hill, and principal road is readily found. It also embraces the principal parts of Maryland and Pennsylvania. The other Map, covering about fifteen square feet, gives all the Southern or Slave States, including Missouri, Kentucky, Virginia, Maryland, Delaware, and all south of them. Though not so minute as the Map of Virginia, this shows all the counties, principal towns, rivers, etc., of the Southern States. Any person subscribing now for the *Agriculturist*, is presented with a choice of the above two Maps. In addition to this, every new subscriber for 1863, (Vol. 22,) receives the *Agriculturist* for the rest of the year *without charge*. We have long received the *Agriculturist*, and can testify to its real merits. Every number is well illustrated, and contains a very large amount of really useful, practical, reliable information for the Farm, the Garden, and the Household, including a very interesting department for the little ones. No one can fail to get many dollars worth of useful hints from a volume of the *Agriculturist*, while the maps now are so much extra. We have sent for two copies of the paper so as to get both maps.—Send for the paper on our recommendation, or if you prefer, send a dime for a single copy, and examine it for yourself. The address of the Publisher is ORANGE JUDD, 41 Park Row, New York.

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ARTICLE XXXI.

PROF. MAHLA'S REPORT ON THE CHICAGO RIVER.

*To the Committee of Aldermen, appointed for the
Investigation of the Sources of Impurity in Chicago River :*

GENTLEMEN :—I have the honor to present to you herewith the result of a chemical investigation, instituted at your request, with a view to trace the impurity of the Chicago River to its cause or causes. Difficult as this task is by itself, its complication has been considerably increased by certain circumstances beyond our control. Nevertheless, I trust that certain facts, exhibited by the accompanying table, will prove satisfactory to the members of the Common Council, and the public in general, where to locate the source of these impurities.

The odorous bodies which proceed from the Chicago River water are products of the decay and decomposition of animal and vegetable matter. Amongst them we recognize ammonia, sulphuretted and phosphuretted hydrogen, light carburetted hydrogen (marsh gas,) and scores of others, which are either of minor importance, or are summed up under the mysterious name "miasmatic effluvia."

The above-named combinations are produced in variable proportions, ammonia being the most prominent and important amongst them. This substance is generated always when ani-

mal or vegetable azotized materials are undergoing putrefaction or decay. It is a well-known fact that animal refuse matters are rich in nitrogen, and so is the vegetable refuse produced in distilleries, and known there under the peculiar term of "slop" or "swill." It is evident, therefore, that the slaughter and feeding houses, the tanneries, distilleries, and glue factories, if throwing such refuse matter into the River, admix to it ingredients that are rapidly redissolving their constituents into simpler compounds, *one of which is ammonia*. It need hardly be remarked here that the same body is contained in sewage, and that it is generated in considerable quantities by the dry distillation of coal. In so far now as this compound, ammonia, admits of a very accurate determination, I directed my attention entirely to it, disregarding fully the inorganic mineral constituents, because they cannot, under any circumstances, take an active part in the production of odorous bodies.

The small amount of current existing in the Chicago River is controlled almost entirely by the influence of winds. It is a fact well known to any one who pays attention to it, that a north or northeast wind makes the water rise in our River, whilst a southern or southeastern makes it fall. With other words, a northerly wind produces an upward, while a south wind causes a downward current. An east wind has rather the former effect, while a west wind drives it more or less outwards. If the wind be not very strong, all these movements are but slight and slow, and hence it is true that the Chicago River is more or less stagnant, in so far as the supply of fresh water from its origin is not very abundant. In consequence of these facts, any impurities emptied into the River remain in it for considerable time, or are, under a favorable wind, slowly driven into the Lake. The decomposition of animal and vegetable substances begins almost at the very spot where they mix with the River, or, if odorous principles in free state are admixed to it, they are found not far from their place of production in *larger* proportion than in others.

These considerations evidently point out the course of investigation. An accurate determination of the quantity of ammonia

in different parts of the River must fairly indicate a rapid increase of deteriorating substances, and must lead to the discovery of the parties by whom nuisances are produced. It was, however, absolutely necessary, in order to obtain reliable results, to collect the water only when the current of the River was downward, and in so far as this is controlled by the direction of winds, this had to be borne in mind.

The impossibility of collecting the different specimens of water for the purpose of a chemical analysis, at once, is obvious. The materials which are producing ammonia are subject to such rapid changes, that it was deemed advisable not to collect more specimens of water than could be analyzed within a reasonable time. To establish, however, a ratio between the various samples, I collected with every new series a specimen of water from a locality which had been analyzed at a previous time. Every rain had a certain bearing on the condition of the water—a fact which is fully demonstrated by the data given in the subjoined table. A heavy rain had made its appearance just one day before the first specimens of water were collected. As it takes, however, four or five days before the rain water flows into the River, it is easily intelligible that an amelioration in the condition of the water can be observed only after the lapse of such a time. The inference referred to can be appreciated by glancing at columns II, III, IV, V, and comparing the results obtained from the specimens 1, 2, 3, 4, 5 with 7, 8, 9, etc., also 10 with 17.

As a general thing, it was found that the specimens of water taken from the South Branch were purer than those from the North Branch of the River, (compare 17 with 18 and 19; also, 27 and 28 with 29 and 30, and 31.) This is undoubtedly due to the fresh water with which that Branch is supplied from the Desplaines River, but still more so from the Canal. By descending the River, it is found that the first rapid increase in the quantity of ammonia takes place between Van Buren and Madison streets, or rather in the vicinity of Monroe street, (compare 8 with 9; also, 12 with 13, 14, 15, and 16.) The amount of ammonia increases slowly by going down into the main River,

and reaches its maximum between Rush and Clark streets. The first specimen of water from the North Branch was taken far above all factories, at a locality where it would be supposed that the River water contained both organic constituents, and especially ammonia in no larger proportions than they would be found in ordinary River water. (See 18.)

Descending the North Branch from that place, it can be seen that the deteriorating materials commence increasing at Clybourne avenue, (below Nickerson's and above Wicker & Co.'s; compare 18 and 19.) The condition of the River becomes, however, rapidly worse between Clybourne and North avenues, (compare 19 with 20.) The same is observed between the latter place, Division street, and Chicago avenue, (compare 29, 30, and 31.) From there, however, to Indiana street, the ammonia augments in no greater proportion than would be attributed to natural causes, (compare 21 and 22.) A river being the drain of a country or a town through which it flows, must of course dissolve all the impurities which enter it in its course.

These same observations can be made by every layman, simply by testing for sulphuretted hydrogen. This combination is not contained in free state in the River water, but united with ammonia. Lead-paper, when held over the surface of the River water contained in a half-gallon bottle, is not affected, provided the specimen be not taken from the immediate neighborhood of a sewer. It is discolored, however, rapidly, if a few drachms of concentrated sulphuric acid are added. This substance not only liberates that body, but heats the River water sufficiently to disengage the gas. The rapidity with which the discoloration is effected, and the darkness of the paper, will give at least an idea as to the impregnation of the water with that body. It is obvious, however, that such a proceeding cannot serve for any *accurate* determinations. The fact now that the North Branch of the River is lined, above Chicago avenue, with distilleries, tanneries, slaughter-houses, stables, and hog-pens, (in some of which more than 1000 head are kept,) explains the results obtained by chemical analysis. The urine, mixed with the *fæces* of the pigs and cattle kept in those stables, is poured into the

River. Occasionally the slop of the distilleries runs over and is added, with the blood of the slaughter-houses, to the decaying substances. Under such circumstances, what else could be expected than the commencement of a rapid decomposition, started by the action of numerous bodies, all of which are already engaged in the same process? And is it to be wondered that the water of the North Branch is *almost as impure as that taken from one of our most important sewers?* (Compare 29, 30, 31, with 34, 35, 36.

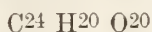
Another observation which was made in the course of these investigations is the following:

Copious masses of gas rise to the surface of the river water between Clybourne avenue and Division street, especially, however, in the neighborhood of the Chicago Distillery Co. (Rawson & Streeter.) This takes place in such proportions that—to use the language of the people living there—the River boils. This gas was found to be a mixture of carbonic acid and light carburetted hydrogen (marsh-gas.)

The water of the North Branch is always darker than that of the South Branch of the River, provided the River be in its natural condition, undisturbed by the pumping operations of the Illinois and Michigan Canal at Bridgeport, or cleaned out by heavy rains. This difference in color was especially remarkable during the last eight days, and reached such a degree that the first one appeared almost black when compared with the other. A great deal of curiosity has been manifested by the public as to the probable cause of this black color. In my opinion, it is a natural consequence of the decay of vegetable substances, and readily intelligible. The slop of distilleries consists of a variety of substances, some of which are of great value for fattening cattle, and are used by several parties for that purpose. The cellulose, however, which is an important item of the constituents of slop, is indigestible, and passes off unaltered with the *feces*. This cellulose now is the material, which, by its decay, produces, at a certain period, the black body, which, when suspended in the water, imparts to the latter its remarkable black color. In order to explain my views, I am forced here to call

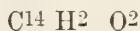
an analogous fact to remembrance—the formation of coal. I do not mean that coal formation which took place in the earliest periods of the earth, but one which is still progressing. KNAPP says, in this respect, in his excellent work on chemical technology: “It would be going too far, if we would deny the continuous formation of coal, even at the present time. The large rivers of the American continent carry often numbers of trees away, which become heavier the more they are soaked with water, and sink finally to the ground. There they are covered with mud, and undergo a slow process of decay. Such trees are converted, after some time, into brown coal. A similar process is the formation of peat, and, I hold, that the formation of the black body in our River is an analogous fact. Let us call this product, formed from cellulose, ulminic acid; or let us denominate it otherwise. The fact is, it is a derivative which is richer in carbon than the original cellulose, and formed from it. If we compare the composition of cellulose with that of brown coal or ulminic acid, we will readily find that the latter two are richer in carbon than the first; and it is now generally assumed that this change is produced by the elimination of oxygen and hydrogen, with a little carbon in the form of carbonic acid, marsh-gas and water.

Cellulose =



If we subtract: $\left. \begin{array}{l} 8 \text{ equiv. water,} = \text{H}^8 \text{O}^8 \\ 5 \text{ equiv. carb. acid, } \text{C}^5 \text{O}^{10} \\ 5 \text{ equiv. marsh gas, } \text{C}^5 \text{H}^{10} \end{array} \right\} = \text{C}^{10} \text{H}^{18} \text{O}^{18}$

we obtain in the following, viz.:—



the formula of a body that is very similar in its composition to certain varieties of brown coal. Or,

1 equiv. cellulose, =



decomposes into

$\left. \begin{array}{l} 1 \text{ equiv. ulminic acid} = \text{C}^{20} \text{H}^6 \text{O}^6 \\ 2 \text{ equiv. carbonic acid} = \text{C}^2 \text{O}^4 \\ 2 \text{ equiv. carburetted hydrog.} = \text{C}^2 \text{H}^4 \\ 10 \text{ equiv. water} = \text{H}^{10} \text{O}^{10} \end{array} \right\} = \text{C}^{24} \text{H}^{20} \text{O}^{20}$

This argument seems to be substantiated by the observation that both carbonic acid and marsh-gas are evolved in such copious masses from the bottom of the River, (as stated above,) and

that the black color begins just below the still-houses and stables.

Thus it appears that the largest portion of the River nuisance is generated on the North Branch, and it must be borne in mind that *not a single sewer* empties into that part of the River.

It cannot be disputed, however, that the sewers themselves give rise to a certain portion of the odorous effluvia, and will do this in a still greater measure in the course of time, (a thing which was foreseen by our able Chief Engineer, Mr. E. S. CHEESEBROUGH, and mentioned by him in his report as early as 1855.) But considering that the sewers, which are of importance, are emptying their liquids into the Main Branch of the River, so that the sewage has but a short distance to flow until it mixes with Lake water, and is largely diluted with it. I do not believe that their effects are for the present specially noxious.

It may be stated here that all the sewers south of Madison street, with the exception of a single one, are of not much importance, and that the sewage contained in them is but little richer in ammonia than the River water itself. The single sewer, however, to which I have made reference is the Monroe street sewer. The liquid contained in it is very rich in ammonia, (compare 32); contains coaltar-creosote (carbolic acid), and exhales copious quantities of sulphuretted hydrogen; a lead-paper held in a distance of four or five feet from the surface of the water is blackened almost immediately, provided that the current has a riverward direction. The discoloration of lead-paper is effected in a much slighter degree by the sewage of other sewers.

Admixed to the liquid discharged by the Monroe street sewer are tarry substances, which have accumulated in the River to such an extent that its whole bed seems to be covered with it, for every steam tug wheeling up the water makes a portion of tar rise to the surface. The presence of these tarry substances can be traced from Adams street to Rush street bridge. Sulphuric ether agitated with the water extracts them readily; they may be separated from the ethereal solution by a subsequent spontaneous evaporation.

It appears from the tables, that the sewage contained in the Rush street sewer is less charged with ammonia than other sewers, (compare 33, 34, 35, 36.) This may look strange to some, as it is known that the greatest number of privies are connected with it. The water in this sewer is in a condition perfectly different from others. It is hot, (heated by the condensing waters of the pumping works and breweries,) and hence less apt to hold gaseous bodies in solution. Ammonia and its associates of miasmatic effluvia are, therefore, sent into the air as soon as generated. Hence this sewer becomes often very offensive to the inhabitants of the street, much more so than Randolph street sewer to the inhabitants of that street.

From the above, it may be seen that, 1st. The greatest portion of the impurities which give rise to putrid effluvia enter into the North Branch of the Chicago River; that the urine, fæces, etc., fed on the swill of the still-houses, by being allowed to flow into this Branch, are the most direct causes of noxious exhalations; that certain distilleries, in allowing portions of the swill to run into the River, contribute also their share to them.

2. The Monroe street sewer discharges into the River a liquid which contains odorous substances that are usually produced in gas factories, which are more disagreeable than noxious.

3. The city sewers alone are not yet of sufficient importance to create serious trouble, but will do so undoubtedly in the course of time.

4. The slaughter and packing-houses on the South Branch, cannot be blamed *at present*, (compare 3, 4, 5,)—a conclusion which may be inferred from the fact that they are not, and have not, been working for several months previous to the commencement of this investigation. The question whether they do throw waste materials into the River, when working, can be settled only in spring-time, after the River ice has given way.

It is undoubtedly a matter of great importance how the existing nuisances can be abated. I cannot omit, however, to make here the remark, that not all the odorous effluvia are sent forth by the Chicago River. The packing and slaughter-house owners are at present not doing anything which is objectionable or de-

teriorating our River water. But, if my information is correct, they leave large quantities of refuse matter in certain places near by, where they undergo putrefaction. The odor in the vicinity of such establishments is unbearable; and, I ask now, is the stench by which Bridgeport is infested, and which can be observed during a favorable wind, even in our city business streets, less objectionable because it proceeds directly from the soil on which the animal refuse is thrown, and does not emanate from the River water? Are the gaseous bodies generated by the putrefaction process less noxious in the first than in the latter case?

I should propose that these men, instead of throwing a valuable azotized compound away, should use it up *for the production of saltpetre*, which is an article commanding invariably a certain price, that would not only cover expenses, but secure a handsome profit. The same might be done by the owners of the stables and piggeries with the urine and manure. The gas factory, however, instead of pouring the wash-water into the River, could use them for the *production of ammoniacal salts*, a thing which is done in most of the European cities, with a great deal of advantage. By doing so, the offensive sulphuretted hydrogen could be got rid of in a more complete manner than by using dry lime purifiers.

In conclusion, I wish to state that the determinations of ammonia were made by volumetric analysis, principally following Mr. BOUSSINGAULT's plan, and adopted by him in the determination of that body in rain, snow, river, and spring waters, (*Annales de chimie et Phys.* xxxix, page 257; also, *Mohr's Hand-Book der Titrir methode*, page 77.)

No. of specimens of water.	Date of collection.	Where Collected.	I.	II.	III.	IV.	V.
			Wind.	Rain, inch's.	Organic constituents.	Ammonia in 100,000 parts.	Ratio of Ammonia in the different specimens.
SOUTH BRANCH.							
1	July 22	Above Wahl's glue factory,	s	.....	0.56726	.....	.....
2	" 23	Archer road bridge,	w	.....	0.51343	.....	.....
3	" 23	Opposite Hancock's packing house,	w	.....	0.40944	0.216720	993
4	" 23	Halsted street bridge,	w	.....	0.41474	0.217152	1000
5	" 23	Twelfth street bridge,	w	.....	0.41804	0.282168	1299
6	" 23	Clark street bridge,	n w	.....	0.70440	.....	.....
7	" 27	Twelfth street bridge,	e s e	.....	0.36202	0.108180	1299
8	" 27	Polk street bridge,	e s e	.....	0.36632	0.125280	1504
9	" 27	Madison street bridge,	e s e	.....	0.38071	0.223200	2680
10	" 29	Halsted street bridge,	e s e	.....	0.36704	0.146844	1000
11	" 29	Twelfth street bridge,	e s e	.....	0.37208	0.190800	1299
12	" 29	Van Buren street bridge,	e s e	.....	0.39693	0.233460	1589
13	" 29	Opposite Monroe street, middle of River, ..	e s e	.....	0.40283	0.276948	1885
14	Aug. 1	Twelfth street bridge,	w	.....	0.38622	0.244764	1299
15	" 1	Dock, just south of Monroe,	w	.....	0.43600	0.417384	2211
16	" 1	Randolph street bridge,	w	.....	0.57538	0.419868	2228
			7				
No. of specimens of water.	Date of collection.	Where Collected.	I.	II.	III.	IV.	V.
			Wind.	Rain inches.	Organic constituents.	Ammonia in 100,000 parts.	Ratio of ammonia in the different specimens.
NORTH BRANCH.							
17	Aug. 1	Halsted street bridge, South Branch, for comparison,	s	.....	0.04805	0.10006	1000
18	" 8	Bridge opp. Faber's bone black factory, almost a mile n. of R.R. crossing & Nicker's, ..	s	.....	0.05010	0.09945	993
19	" 8	Clybourne ave. bridge, below Nickerson's, and above Wicker & Co.'s distillery,	s	.....	0.06571	0.11475	1146
20	" 8	North avenue, below Rawson & Streeter's, ..	s	.....	0.06982	0.19125	1911
21	" 8	Chicago avenue bridge,	s	.....	0.08338	0.23296	2327
22	" 8	Indiana street bridge,	s	.....	0.08625	0.25583	2556
23	" 9	.....	1 3/4				
24	" 10	Above foot of Franklin street,	s w	.....	0.055037	0.25671	.....
25	" 10	Below Clark street bridge,	s w	.....	0.066538	0.30600	.....
26	" 10	Below Rush street bridge,	s w	.....	0.066948	0.34425	.....
27	" 22	Halsted street bridge,	s w	.....	0.1728	0.1728	1000
28	" 22	Van Buren street bridge,	s w	.....	0.2754	0.2754	1593
29	" 22	Madison street bridge,	s w	.....	0.3876	0.3876	2254
30	" 22	Chicago avenue bridge,	s w	.....	1.3243	1.3243	7663
31	" 22	Division street,	s w	.....	1.3022	1.3022	7535
32	" 22	North avenue bridge,	s w	.....	1.1528	1.1528	6670
33	" 22	Monroe street bridge,	s w	.....	2.7200	2.7200	15740
34	" 22	Randolph street sewer of South side,	s w	.....	2.6112	2.6112	15111
35	" 22	Randolph street sewer of West side,	s w	.....	1.0676	1.0676	6178
36	" 22	Clark street sewer of North side,	s w	.....	1.4502	1.4502	8392
	" 22	Rush street sewer of North side,	s w	.....	0.7199	0.7199	4166

EXPLANATION OF THE TABLE.

Column I. shows the direction of the wind at the time of collection.

Column II. shows the quantity of rain fallen within 24 hours on the square foot of surface—expressed in inches.

Column III. exhibits the proportion of organic matter in several specimens of water.

Column IV. gives the actual quantity of ammonia in 100,000 parts.

Column V. exhibits the ratio of ammonia in the different samples of water. In comparing the various specimens, I had to assume one of them as unity, which I did by giving to the water collected at Halsted street bridge the round eipher 1000. The fraetional numbers exhibited in column IV. were assumed as whole numbers, and all of them reduced to the standard of Halsted street—1000.

The titre solutions used by me were, however, only one-tenth of the normal strength, thus making the test more delieate.

The organic matter was determined by normal solution of mineral ehameleon, under addition of some cont. sulphuric acid. The number of eubie eentimeters used were reduced to oxalie acid. It was assumed that the reaetion was ended when the rose color lasted for a period of five minutes. Though this method is very dispatching, and for the present purpose immensely preferable to the old mode of ineinerating the dry residue of a given quantity of water, it is evident that the direct quantities of organic matter are not found by it. *All that is found is the proportion* of organic constituents in various specimens of water. The foregoing results are all that can be aseertained by an investigation at this season of the year. The additional effects produced upon the water by the refuse of slaughter and packing-houses ean only be known in spring-time.

ARTICLE XXXII.

MEMPHIS, TENN., Oct. 21, 1862.

MESSRS. EDITORS:—Sickness at sometimes, and exeess of duties at others, have prevented me from making my usual reports to you of late, eoneerning army medeal matters. The most recent surgical information which I ean present is that of the Battle of Corinth.

Orders were there given to amputate no thigh above the middle, without a full eounel, and then only in desperate emergency. This order was given in eonsequeene of the horrible mortality of high amputations. The result was strikingly, but

perhaps fallaciously, brilliant. Of all the thighs amputated below, or at the middle, four-fifths were alive *and doing finely*, on the tenth day, when last heard from. This was among the Union troops. Among the wounded Secesh, who fell into our hands, the same rule was adopted, but the result was exactly reversed. *Four-fifths of similar cases among them died before the tenth day.* This difference in the two classes is due, I believe, to two causes: 1st. The Confederate troops were nearly in a state of starvation, many of them having only roasted green corn in their haversacks. 2d. It is probable that many of the most favorable cases for the operation contrived to crawl away and get carried off on the retreat. There may also be a natural difference in their power of endurance, for it is noticeable through this whole region that the inhabitants have a sallow, thin appearance, which contrasts strongly with the ruddy robustness of our soldiers. In most parts of this region, a ruddy native is a wonder, and a fat one could not be found at all.

Some inquiries into the fate of the compound fracture of the femur above the middle, which by the above rule were excluded from amputation, lead me to doubt the wisdom of the order. They were simply put into the easiest position possible, and kept under expectant treatment only. The result was, that *they all died*. Now, the results of high amputations are frightful, being 80 per cent of deaths; but I submit that even that is better than the death of the whole, as shown under this order. I am inclined to think, from some cases which have fallen under my observation, that gunshot wounds fracturing the femur in the upper fifth, where it consists of cancellar tissue, are less fatal than those of the shaft. At least, one officer whom I treated in such a case with splints made a good recovery.

On the whole, the important question of what shall be done with gunshot compound fractures resolves itself, according to my military experience, as follows:

In the upper half of the femur, dress with extension splints, and, if necessary, make early and free incisions, but do not amputate if it can be avoided.

In the lower half or at the knee-joint amputate or resect.

In the leg, if the knee is perfect, try to save the limb, except in very bad cases.

In the arm and forearm go all lengths to save the limb. Re-sections are very successful in every part of the superior extremities.

If the shaft of a long bone is shattered by a bullet, and amputation is not performed, free incisions are usually required, either immediately or after the third day. The bullet hole is apt to close, or be blocked with shreds of flesh; the pus is confined, and burrows horribly up and down among the muscles, and forms so large a suppurating cavity that the patient succumbs from exhaustion. A large proportion of the patients, however, die of prostration before suppuration commences.

The health of the army here has been excellent. Among 9000 men, in the month of September, the sickliest of the year, the deaths were only 47. About 300 are in hospitals, and 500 slight cases receive medical attention in quarters. The deaths are only about 1 per cent of all the cases which come under treatment.

Dysenterics have not been severe, as a general rule. I have had about 150 cases in the artillery, since entering the service, and not a single one has died. I lost a few patients of chronic diarrhoea, but none of the acute forms. There has been no cholera or yellow fever in camp, and only a few cases of congestive chills.

There are about 1400 contrabands here, at work upon the fortifications. About 1 or 2 per cent of them have pistol wounds, received in escaping from their masters. Of course, the severer cases do not reach here; hence we see a good many moderate wounds among them. One of them was shot through the lungs and in the hand, and had some fifty dog bites on his legs, and a spot beaten raw on his back, of the size of a dinner plate. I tried to save him, but he died of his injuries, on the third day after he came in. Two days ago, the guerillas shot a negro in sight of the fort on the opposite side of the river, and left his body unburied on the sand. Our soldiers went over and interred it. The barbarities of this sort, which have fallen under my

notice, have constituted more than half my surgery, for the last two months. The skirmishes with the enemy in this vicinity, result mostly in buckshot wounds upon our soldiers, which are of no great severity. One case, however, where the shot was made close at hand, sent a projectile into the brain, of which the patient died in about five days.

The foolhardiness of some men is amazing. At Fort Randolph, I saw three officers take a loose torch and explore an old subterranean rebel magazine, where were scores of charged shells lying about, and the torch dropping fire among them. An artillery soldier came to me with a wounded hand. He had been trying to burn out the fuze of an old rebel shell with a red hot poker. The success of his interesting experiment astounded him.

The negroes at work upon the fortifications have about the same proportion of sick as the soldiers, and exactly the same diseases, viz.: intermittents, remittents, diarrhœas, and dysenteries. I think the question of their capacity to tolerate climatic influences may be answered thus: they endure the heat of summer with more comfort than the whites, but are not a particle more exempt from malarious diseases. My observations here confirm those of Dr. CARTWRIGHT, of New Orleans, in that respect. In cases of dysentery, I think they succumb to the disease more quickly than the whites.

The Surgeon-General has commenced a pathological cabinet at Washington, and ordered all specimens collected in the army to be forwarded. It is a worthy object, and may be the means of throwing great light on some points of surgery, especially the effects of projectiles upon the long bones.

I trust I shall be with you to resume my lectures in Lind University, this winter. Yours truly, E. ANDREWS.

Surgeon of 1st Ill. Light Artillery.

ARTICLE XXXIII.

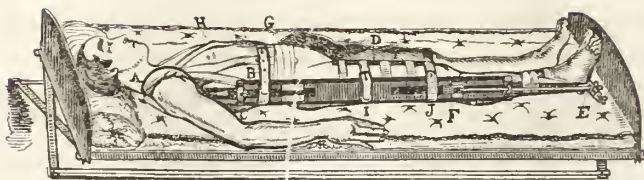
A NEW SPLINT FOR FRACTURE OF THE FEMUR.

E. F. DODGE, M.D., Janesville, Wis.

MESSRS. EDITORS OF THE EXAMINER:—During the course of lectures by Prof. ANDREWS of 1861-2, in the Medical Department of Lind University, he exhibited and explained the application of a rude splint, by which both extension and counter-extension could be made by the use of adhesive plaster in all cases of fracture of the femur and leg; doing away with the perineal band, so long used and revered by all of the disciples of Æsculapius, except Dr. GILBERT, who used the adhesive plasters in fractures of the femur and leg, but in such a manner as to amount to the same thing as the perineal band. (See description of GILBERT'S apparatus, in Prof. HAMILTON'S work on *Fractures and Dislocations*, page 420.)

It will be noticed, from a slight examination of the accompanying cut, that this splint is so constructed as to entirely do away with the perineal band, or even a semblance of it, and, at the same time, affording a secure, perfect, and reliable counter-extension, without any of the objections so strongly and justly urged against all other methods, such as excoriation and ulceration of the perineum and axilla, pressure upon the obturator, crural, and axillary nerves, loosening of dressings by the patient, etc., etc. The apparatus also combines all the advantage gained by the weight and pulley, as well as the fixed dressing of DESAULT.

I think that this splint entirely and satisfactorily fills a desideratum long admitted to exist in the treatment of fractured femurs, no matter in what part of the bone occurring. Also, that shortening, and all other deformities heretofore resulting from the most carefully and judiciously applied apparatus, is fully obviated by the instrument now invented, which completely overcomes all the difficulties encountered in the treatment of these fractures.



The following description of the cut will aid the surgeon in constructing and applying the splint:—

The steel spring A, passing from the small bar C, to the point of the shoulder, should be made in such a manner as to have all the spring between the centre of the bow and the hook, and of such strength as to yield from one-half to three-fourths of an inch on the application of from three to five pounds weight.

By the use of this spring we get constant and steady traction upon the muscles, which overcomes their contractility, and the limb is kept extended to its proper length, without any trouble, and with but very little traction.

The main bar F, is three inches wide, five-eighths of an inch in thickness, and twenty-eight inches long, either end of which is grooved for the reception of the two smaller bars C and E, which can be adjusted by means of the set screw C, and the extending screw E, so that the apparatus may be used for the longest or shortest patient. The two smaller bars are one and a-half inches wide, and three-eighths of an inch thick. The extending bar E, is eighteen inches long, and the counter-extending bar C, is fourteen inches long.

To the inferior extremity of the extending bar E, is attached a cross-bar, to which is attached a foot piece, and a portion of the screw-extending apparatus. By the means of the thumb-screw E, extension may be made at any time, without removing any of the dressings or disturbing the limb in the least. The oblique counter-extending adhesive plaster H, commences at the middle of the crest of the ilium, and extends obliquely across the chest anteriorly to the shoulder, then obliquely downwards and backwards to the point of commencement, (the middle of the crest of the ilium.)

The cut exhibits another counter-extending adhesive plaster (which by mistake was not lettered,) that commences a little internal to the middle of the crest of the ilium of the injured side, and extends upward to the shoulder of the same side, then downward on the dorsal aspect of the chest, to a point opposite the place of commencement.

G, adhesive plaster passing quite around the body, covering the ends of the plasters H and the one not lettered, binding them firmly to the surface, which prevents their slipping when extension is applied.

The counter-extending plasters should be from one to three inches in width, according to the size and strength of the patient, or according to the amount of force necessary to be used in keeping the limb properly extended. The extension is made by adhesive plasters in the ordinary manner.

B, I, and J, are straps of webbing, which are made fast to the main bar, and are buckled around the limbs and body.

In cases of compound fractures, this apparatus may be modified, so that the wound may be dressed without removing the splint, by cutting out a section of the main bar, and riveting strong pieces of iron to each piece, which may be bent in such a manner as to leave the wound exposed.

The apparatus here described was used by Dr. TREAT and myself, in a case of oblique fracture of the femur, occurring in the lower half of the lower third of the bone.

The limb was dressed in the ordinary manner, with short splints, to keep the ends of the fractured bone in perfect opposition. The cure was perfectly satisfactory to both patient and attendants. The unfortunate member is quite as long as its more fortunate fellow, and perfectly natural in its appearance, there being scarcely any callous.

The patient was a young man, 18 years of age, and of a rheumatic diathesis. Hence he complained some of rheumatic pains during the progress of reunion of the bone, but never found the least fault with the apparatus. The extension and counter-extension being borne as well the last as the first day of their application. There was not even the slightest abrasion

of the cuticle, notwithstanding the very hot weather during the period of his confinement, it being from the 13th of June to the 1st of August.

Indulging the hope that the profession will give this new method of treating fractures of the femur and leg a fair and impartial trial, I am confident that the suffering of the unfortunate ones will be infinitely diminished, and the success of the profession greatly augmented.

ARTICLE XXXIV.

GENERAL PATHOLOGY OF ERUPTIVE FEVERS,
AND THE PRINCIPLES THAT SHOULD
GOVERN THEIR TREATMENT.

Read to the Chicago Medical Society, Nov. 7, 1862.

By N. S. DAVIS, M.D., Professor of Clinical Medicine, &c.

The diseases directly alluded to, under the head of eruptive fevers, in this paper, are Variola, Rubeola, and Scarlatina. Their great relative importance is shown by the fact, that in England and this country, and probably throughout all the civilized countries, from *eight* to *ten* per cent of the entire mortality arises from these three diseases.

A glance at the statistics of mortality show another interesting fact, namely, that while one of these diseases is most prevalent and fatal one year, and another the next year, the annual aggregate mortality from them all remains nearly uniform. It also appears from the same statistical tables, that while the mortality from small-pox has been greatly diminished by the general practice of vaccination during the last half century, the mortality from scarlatina, rubeola, and whooping-cough has correspondingly increased, thereby maintaining the annual aggregate nearly the same. This has led Dr. GREGORY, and some others, to claim that there exists among the class of acute eruptive fevers a "law of compensation," or vicarious prevalence.

Aside from the intimate relation which the several eruptive fevers bear to each other, as shown by the statistics already alluded to, there are several interesting characteristics common to them all:—

1st. While they often occur epidemically they are all propagable by contagion.

2d. There is in the human species an almost universal susceptibility to these fevers. The most liberal estimates do not claim, as exempt from susceptibility, more than one in sixty of the entire population.

3d. While there is an almost universal susceptibility to each of the diseases under consideration, such susceptibility is permanently destroyed by a single attack. Hence it is very rare that the same individual is attacked twice by the same eruptive fever.

4th. Each of these diseases are not only self-limited in duration, but they present several well-defined stages or epochs: as the period of incubation, the promonitory fever, and the period of eruption.

These several characteristics plainly indicate the fact, that this class of diseases arise from exciting causes of a specific and uniform character; causes which are generally ranked as animal poisons, and capable of being reproduced in the body of the sick. They may be introduced into the system either by contact with the cutaneous surface, or by inhalation and absorption from the pulmonary mucous membrane.

When introduced into the blood by either of these methods, even in extremely minute quantity, no immediate appreciable effect is produced; but in a period varying from four to fourteen days, it becomes multiplied in the blood to such an extent as to disturb the susceptibility of all the organized structures of the body, thereby causing all the symptoms of an active irritative grade of general fever. That these poisons do thus effect the blood, and through it the properties of all the tissues, is demonstrated by the fact that inoculation with the blood of patients laboring under the active stage of rubeola and scarlatina, communicates the same disease to the persons inoculated. By

what process these poisons are multiplied in the blood during the period of incubation is not known. From an early period, it has been regarded as analagous to fermentation in vegetable matter. This idea was distinctly inculcated more than two hundred years ago, by SYDENHAM and DIEMERBRÆCK. In modern times, it has been revived and rendered somewhat popular by LIEBIG.

From the supposed analogy to the process of fermentation, the process of incubation in the eruptive fevers has been called *zymosis*, from the Greek word signifying *ferment*; and they have been styled *zymotic* diseases, by a large class of modern writers.

Whether there is any reality in the analogy here alluded to or not, it is quite certain that by some process the smallest quantity of variolous, rubeolous, or scarlatinous poison introduced into the blood undergoes such rapid and extensive multiplication as to induce, in a few days, a high grade of febrile excitement throughout the whole system. At the same time, it effects such a change, either in the composition of the blood or the susceptibility of the tissues, or both, as to destroy all influence of the same poison at any future period. In addition to the action of eruptive fever poisons on the susceptibility of the tissues generally, they all display a special affinity for the cutaneous structures, in which their presence induces more or less inflammation constituting the eruption. The affinity of those poisons which gives rise to the pustular form of eruption, as the variolous, is so strong as to cause their lodgement in the skin during the first four days of the febrile action, and their consequent removal from the mass of the circulating fluids. This causes simultaneously a subsidence of the general irritative febrile action, and the development of a local pustular inflammation at each point in the skin where the poison has been deposited. If all the poison is thus early removed from the blood, on the appearance of the eruption, the apyrexia becomes complete, and the patient remains free from fever until the intensity of the cutaneous inflammation renews more or less general febrile action. But if, as sometimes happens, some of the poison fails to be deposited in the skin and continues in the blood, the subsidence of the fever

will not be complete on the appearance of the eruption, but will continue with more or less severity, accompanied by progressive deterioration of the blood, and all those symptoms set forth by authors as characterizing the malignant form of variola.

The poisons producing the eruptive fevers of the exanthematous variety, such as rubeola and scarlatina, display a similar affinity for the skin, and in addition also for the mucous membrane of the fauces and larger bronchial tubes; exciting in these structures more or less inflammation of a specific character, but do not become deposited in these tissues to such an extent as to free the blood from their presence, or to relieve the other structures of the body from their irritating effects. Consequently, there is, in these diseases, no abatement of the febrile symptoms on the appearance of the rash or local inflammation in the skin. On the contrary, the fever continues in full severity until the eruption itself begins to decline. That the specific poison continues in the blood during the eruptive as well as premonitory stage, would seem to be demonstrated by the fact that these diseases can be communicated to healthy persons by inoculation with the *blood* of the sick. That it is finally expelled partly through the skin and partly through the kidneys, we have no doubt. That the latter organs take part in the process of expulsion of the poison, and consequently suffer much derangement of their function thereby, is countenanced by the fact that in a large proportion of cases, especially of scarlatina, the urine becomes albuminous during the progress of the disease. And dropsical effusions, produced by deficient and unnatural renal secretion, are well known to be among the most frequent sequelæ of these fevers.

With these explanations, we may sum up our views of the pathology of eruptive fevers as follows:—1st. There is an exaltation of the elementary susceptibility of the organized tissues of the body, with a perversion of vital affinity, as indicated by an active grade of irritative fever and disturbance of the great functions of circulation, secretion, innervation, and calorification.

2d. This general disturbance called *fever*, is the result of the

action of a poisonous material circulating in the blood, altering its properties, and consequently its relations to all the tissues; and, finally, manifesting a special affinity, first, for the skin, second, for the mucous membrane and glands of the fauces, and third, the kidneys.

3d. The special affinities here mentioned, cause an early lodgement of more or less of the poison in the cutaneous tissue, and the consequent development of specific inflammations in the form of exanthems, vesicles, or pustules. The affinity, especially of the scarlatina and rubeola poisons, for the mucous membrane and glands of the fauces, is scarcely less uniform; and owing to the greater vascularity of the structures, often results in the development of inflammation of far greater intensity and danger than that in the skin. Whether these poisons possess a special affinity for the structure of the kidneys, as indicated in the second proposition, or whether the irritation of those organs, resulting in scantiness of secretion, albuminous urine, and ultimate uremic poisoning or dropsical effusions, is simply the effect of an effort on the part of the secreting structure of the kidneys to eliminate the poison from the blood, we may not be able to determine.

4th. The more complete the lodgement and isolation of these poisons in the cutaneous texture, in the early stage of these diseases, the more mild will be all their subsequent progress. On the other hand, the less perfectly the poison becomes lodged in the skin in any given case, the more persistent will be the general febrile action, the more rapidly will the whole mass of the blood become impaired in its properties, and consequently the greater will be the danger of serious internal complications, or of the supervention of typhoid and malignant symptoms.

If the foregoing general summary is correct, or even proximately so, it affords a basis on which can be founded some important practical maxims for the treatment of this very important class of febrile diseases.

The first and most obvious indication to be fulfilled in the treatment, is the use of such remedies as will directly neutralize the poison in the blood, and thereby obviate most of its effects

upon the tissues. Unfortunately, we are not acquainted with any such available antidote. Belladonna, which has been much used both as a prophyllactic and remedial agent, probably has no other effect than to lessen the susceptibility of the tissues, and to aid in determining to the cutaneous surface. Chlorine and the chlorates undoubtedly possess properties more nearly akin to antidotes or destroyers of these and other animal poisons.

We have used them for several years, in all stages of eruptive fevers, and generally with benefit.

Failing to neutralize the poison, the next object in the treatment is to mitigate its irritative action on the tissues, and to aid its natural tendency to the skin, either for lodgement or expulsion. For this purpose, the union of anodyne and diaphoretic properties are required, with a careful avoidance of all those active evacuents that would divert the circulation, and consequently the poison, to internal structures, and thereby directly counteract the natural tendency to relief. On this account, active cathartics are particularly objectionable in these fevers.

A third object in the treatment is to counteract local internal inflammation, whether in the throat, kidneys, or mucous surfaces; and to sustain, generally, the vital powers of the patient.

Selections.

ON THE ALKALOIDS OF HYDRASTIS CANADENSIS.

By WM. S. MERRILL, A.M.

To the Editor of the American Journal of Pharmacy:—

I hoped to be able to attend the approaching meeting of the American Pharmaceutical Association, but find I shall not be able to leave home. I have therefore forwarded to you a small package of samples, chiefly products obtained from the *Hydrastis*, and request you will present them to the Association for their examination.

In a business letter to Prof. Parrish, some months ago, I briefly mentioned these. I was not publishing an analysis or

writing an essay, but briefly stated the fuller results of our experiments, of which I had previously sent him some samples; and I expressed a willingness to have these statements published, as they contained some facts that I did not suppose had been previously announseed. Under these circumstances, I certainly thought some portion of your criticism of the article quite unalled for.

Our examination of the hydrastis was principally made last fall, and I then knew nothing of the analysis of Durand, further than stated in U. S. D., which concludes by saying, "He also discovered a peculiar nitrogenous crystallizable substance for which he proposes the provisional name 'Hydrastin,' until it shall be determined whether it be, as he suspects, an organic alkali." This is certainly very indefinite, and does not even make it certain which of the two alkaloid bases it was which he discovered.

On the 6th of Feb. last, when sending to Prof. Parrish some samples of xanthoxylum bark and other articles for the cabinet which the Pharmaciens of Philadelphia were getting up for exhibition at the World's Fair, I inclosed with them specimens of *Hydrastina* and *Mur. Hydrastia*, which we had obtained, and briefly mentioned their leading properties. These were placed in the College cabinet, and there, Mr. Editor, you had seen them so labelled, and refer to them in your note to the article of Dr. Mahla in the Journal of that month. You certainly must have forgotten this, when in your criticism of July, speaking of my report that, "the Hydrastis contains *two* distinct alkaloids, which we name Hydrastia and Hydrastina," you say "this assumption is to be discountenanced," because I did not acknowledge the analysis of Durand, and Mahla and Perrins, as previous discoveries. Mr. Durand had discovered but one of these bases, and that hypothetically, and Dr. Mahla's article, which had not then appeared, speaks of but one. The articles of J. Dyson Perrins indeed recognises two, but these were not published in London until the April and May following, and I had seen nothing of them until their appearance in the same number of your Journal with the extract of my letter to Prof. Parrish.

It is evident in regard to all of us that our investigations were entirely independent of the others, and thus far *Original*, whichever may be entitled to credit in point of time.

I certainly have no wish to arrogate to myself the merits of other men's skill or discoveries, although I may be remiss in keeping myself posted in regard to them. And lest I be again

accused of any such injustice, I beg leave here to state, I have not conducted these recent experiments alone. Fifteen years ago, I first introduced to the medical profession, the Podophyllin, Macartin, Leptandrin, and some others of that class of agents known as the "Resinoids" or "Concentrated remedies," and set the ball rolling in that direction. But the extensive mercantile and manufacturing business in which, in company with my brother, I became engaged, has since so engrossed my attention that I have found no time for the careful labors of chemical investigation and analysis. We have long felt, however, that many of that class of agents must be greatly improved and perfected by accurate and scientific analysis, or else be rejected from the list of medicinal agents, and have fully appreciated the wide field opened in vegetable materia medica, which, whatever may be our ability, we had no time to cultivate. We have, therefore, employed as an assistant in our laboratory, Prof. H. D. Garrison, a chemist of no mean acquirements, and while he works under our direction, and a good portion of the particular experiments and the steps pursued are at my suggestion, the *manipulations* are almost all performed and the results obtained by him.*

*NOTE BY THE EDITOR.—It seems needful to again refer to the subject of Mr. Merrill's paper, in order that we shall be fairly understood, both by the author and reader. The question at issue relates to the discovery of the active principles of the root of *Hydrastis canadensis*. In our July number, we published an extract of a letter to Mr. Parrish, with the authority of the writer, Mr. Merrill, and accompanied the paper with a critical note. In that paper Mr. Merrill spoke of the two alkaloids in the hydrastis, as though he had discovered them, and applies names to them as though they had not been written of before, he giving the commercial hydrastin the name of Durand's alkaloid, hydrastia; and calling the latter hydrastina; and it was to what we believed to be a disposition to ignore the labors of others that we applied the terms "this assumption is to be discountenanced." Mr. Merrill's explanations tend to modify this belief.

In the present paper, Mr. Merrill says, "It is evident in regard to all of us that our investigations were entirely independent of the others, whichever may be entitled to credit in point of time." "I certainly have no wish to arrogate to myself the merits of other men's skill or discoveries, although I may be remiss in keeping myself posted in regard to them."

Now we will not grant the position, that Mr. Merrill discovered either of the alkaloids, much less both of them, in the proper sense of making a discovery; nor can we admit Mr. Merrill's alleged ignorance of the details of Durand's paper, as an argument in his favor, in view of his knowledge of its existence near at hand, as he himself admits. In 1856, when sending out a collection of the American Materia Medica to Mr. Jacob Bell, for the Museum of the Pharmaceutical Society, we wrote to Mr. Wayne, of Cincinnati, for certain specimens not easily obtainable here. In his reply to my letter, Mr. Wayne, under date Cincinnati, May 23, 1856, says, . . . "I have sent you among the lot of specimens sanguinarina, sulphate of sanguinarina *hydrastin*, and *hydrastia*? I think the last *has all claims to be called an alkaloid*. The

In commencing our investigations, therefore, one of the first articles we took up was the hydrastis; and we thought we had acquired a pretty accurate knowledge of its constitution, and had briefly reported the result, when Prof. Parrish, in his letter of March 8th, acknowledging the receipt of the specimens, says: "The Hydrastina, and Muritate of 'Hydrastia', (Berberina,) and the salt of Sanguinarina are very acceptable, and are placed in the College cabinet, and adds, 'I suppose you have seen the late analysis of a Chicago chemist, transferred to the American Journal of Pharmacy for the current month. The

specimen is as white as it can be made, *much more so than your pet specimen*, [alluding to a specimen of Durand's hydrastia in our cabinet, presented to us in 1851, and which we had shown him on a previous occasion]. I have a new process for obtaining *hydrastin*, at least I have seen no mention of it. I treat the coarse powdered root in cold water in a percolator. To the infusion I add an acid, generally muriatic acid, which throws down the hydrastin as a yellow powder, along with a pectin-like substance. . . . If the precipitate be now treated with boiling alcohol, only the hydrastin is taken up and crystallizes out upon cooling. By this process much less alcohol is lost than in the process of the Eclectic Disp. [Hill's process] and a much finer looking product obtained."

In regard to hydrastia, Mr. Wayne further says: "After I obtain the *hydrastin* from the cold infusion by an acid, I add to the acid liquor an alkali which precipitates a pale yellow powder, which being dried and treated with ether or alcohol, the hydrastia is taken up, and, upon evaporation, it is deposited in colored crystals, which by repeated solution and crystallization are obtained colorless."

Dr. John King, in the Eclectic Dispensatory, says, page 489—edit. 1859—in speaking of hydrastin (muriate of berberina:): "This elegant and highly valuable article was introduced to the profession by Dr. H. H. Hill, of the firm of F. D. Hill & Co., wholesale druggists in Cincinnati," and the process adopted by that gentleman is given in detail at page 480. By reference to the *advertising* sheet of the Eclectic Medical Journal for January, 1853, page 4, we find the following note attached to the name 'hydrastin' in a list of preparations advertised by F. D. Hill & Co., of Cincinnati, viz.: "This article, introduced by us one year ago, is one of the finest extant amongst Botanic medicines. In fact it is the quinine of North America." Hence Mr. Hill did not produce his Hydrastin until a year after Durand wrote, because Durand's Thesis was written in the summer of 1850—presented to the College at the session '50-'51, and of course not published till after the spring commencement in the latter year. Mr. Wayne's process is also given in that work, and nothing is said in reference to Mr. Merrill in that connection, albeit he was largely consulted by Dr. King in the compilation of his work. Our own impression had been that Durand's hydrastia was the only alkaloid in the hydrastis, and that the *hydrastin* of the Eclectic Dispensatory was the alkaloid of Durand, disguised by the yellow coloring matter of that author, [since shown to be berberina by Dr. Mahla], and the reader will find in the Pharmaceutical Journal, vol. 16th, November, 1856, page 269, and the following note that accompanied the sample of Eclectic hydrastin then sent to London: "*Hydrastin*. A small specimen of this principle, which is used by the Eclectics as a remedy, &c., &c. I believe the yellow color is mainly due to the adherent yellow resin or coloring matter, just as piperine is colored by the resine of pepper;" previous reference has been made to Durand's discovery of the alkaloid on the same page. From this it will be seen that at that time neither Mr. Wayne nor

whole subject of the proximate principles of the hydrastis requires further ventilation."

In fact, however, I have not seen the article of Dr. Mahla referred to, and the above word in parenthesis was the first intimation I had that the alkaloid I had named Hydrastia, was identical with berberina. The analysis of Mahla was not entirely satisfactory, and I immediately set about having this point further investigated.

From some brief experiments, too crude to be reported as a scientific analysis, I had a long time before satisfied myself

ourselves had a correct notion of the nature of hydrastin. Subsequently to this—August, 1857—Mr. H. A. Tilden, of New Lebanon, sent us some samples of vegetable principles, and among them two labelled as follows: "Hydrastin," in silky crystals, and "Hydrastina alkaloid," a yellow amorphous powder. At that time we supposed it also was Durand's alkaloid, with yellow coloring matter, in a pulverized condition, but now, on trial, it is soluble in water to a considerable extent, coloring it yellow, and the solution restores the color of reddened litmus, and it is probably berberina.

Mr. Merrill's allusion to the specimens sent to Mr. Parrish, therefore, have nothing to do in deciding the case, as pure specimens of the same had been in our private cabinet for five years previously, as will be seen above.

It will be observed that Mr. Merrill recedes from his position in his former paper, that hydrastin is not berberina, he having been misled by the impurity of his sample of berberina.

We also wish to remark on Mr. Merrill's views in regard to the naming of those principles. He calls Durand's alkaloid Hydrastina, and the berberina alkaloid Hydrastia. We protest against this suggestion. Durand distinctly claims for his alkaloid (see page 117, vol. 23d, of the Amer. Journ. Pharm.,) if his assertion of its alkaline nature is corroborated, the name of *hydrastia*. Now, as it is the only peculiar alkaloid in hydrastis, it is entitled to that name, 1st, because it was given to it by Durand in 1851, and 2d, because it is the proper derivative for an alkaloid from the name hydrastis. Mr. Merrill argues because berberina is more abundant in the hydrastis than in other sources, it should be called hydrastia. This will not do, because berberina is found in at least four distinct drugs, and Columbo has equal claims. He also suggests "Xanthia" from its color. This is a beautiful name, and might have been appropriately used at first, but it is not probable that this name will be adopted, as M. Buchner, Sr. and Son, in 1835, describes this alkaloid in great detail, and gave it its present name, (see Journ. de Pharm., vol. xxi. page 408.).

Lastly, in justice to Mr. Durand, we wish to remove the impression conveyed in the paper of Mr. Merrill, that Durand's description of his alkaloid was very indefinite. So far from this being the case, he describes three distinct processes for obtaining it, proves its alkaline reaction, its crystalline form, its saturating power, its precipitability by tannic acid and ammonia, its total destructibility by heat, and its nitrogenous nature. The only reason he hesitated to call it an alkaloid was the fact of its salts not crystallizing. Now, on this point Mr. Merrill says, it forms salts, "that are very soluble, and difficultly, if at all, crystallizable," and hence he corroborates Durand, and removes the only reason why he hesitated to call his product *hydrastia*. With these explanations of the past history of these principles, we are prepared to accord to Mr. Merrill and Prof. Garrison all credit due to them for their investigations of these principles in the pages which follow, as a valuable contribution to the knowledge of the subject.

that the yellow coloring principle of the xanthorrhiza was the same as that of the berberis, but did not suspect their identity with that of the hydrastis.

To determine this question, we prepared crystallized specimens of the muriate of berberina, and of our hydrastia, and subjected them to a series of comparative experiments, and these *then* led us to the conclusion, that although similar, they were not identical. Among these experiments were the following:

1st. Equal quantities of these muriates were dissolved in a dilute solution of potassa. That of hydrastia remained unchanged in color, whilst that of berberina became hyacinth red, and these colors remained at the end of five days.

2d. Equal portions were dissolved in equal quantities of boiling alcohol. On cooling, the muriate of hydrastia soon formed large stellar crystals, and when cold became semi-solid. The berberina solution when cold, showed only a cloud of extremely fine crystals. And as far as tried, this salt of berberina appeared more soluble in all cold menstrua, than that of the hydrastia.

3. To equal solutions in alcohol, tincture of iodine was added. In the hydrastia solution, large crystals soon appeared, and continued to form until the whole was a solid mass. Those under the microscope appear long, slender, and bright yellow. The berberina solution slowly evolved fine crystals, much less copiously, and these under microscope have a *brownish* huc.

The behavior with iodide of potassium was much the same, and the distinctions similar.

4. Equal solutions were treated with neutral acetate of lead. Both gave copious yellow precipitates, but that of the berberina appeared perfectly amorphous under the microscope (of 150 diam.) while that of the hydrastia was resolved into a mass of silky crystals.

Several other similar tests were applied, some of which showed no appreciable difference between the two salts, while in others differences were discovered that tended to confirm the conclusions drawn from the above, and named in our letter of June, viz.: that the two bases were not identical. We did not resort to ultimate analysis, for want of suitable apparatus.

We have not been able to repeat or extend these experiments for want of suitable material from which to prepare a better specimen of berberina. But we have since prepared the muriate of the alkaloid base of the xanthorrhiza, of which we send you a sample labelled, "*mur. xanthia*," and this we have sat-

ified ourselves is identical with that of the hydrastia, and this fact, together with the analysis of Mahla and Perrins, leads us to believe our experiments above stated to be delusive, in consequence of some imperfection in our preparation of the berberina, of which we had but a small quantity. Hence we admit the conclusion of Mr. Perrins, that the yellow coloring principle of the hydrastis, the berberis, and the xanthorrhiza, are in all probability identical.

What then is the appropriate name of this beautiful alkaloid? The hydrastis is by far the most copious source, and that from which it will, no doubt, be chiefly obtained; and on this account should have the preference in giving it its name. Moreover, its salts will, without doubt, become important agents in the materia medica, and it is very desirable on this account that its name should point to the plant from which it is derived. These I think strong arguments, especially the latter, in favor of the name "*Hydrastia*," which I propose for it. On the other hand, the other alkaloid, which as yet is known to be found in this plant only, must naturally receive its name from it, and the similarity between the names hydrastia and hydrastina may lead to confusion and mistakes. It may also be considered partial to derive from one plant the name for a principle that is found in several. If these objections should be considered paramount, then I suggest for it the name *xanthia*, from the Greek xanthos, —yellow,—a most appropriate name, as it is the only alkaloid known of a bright yellow color.

But although this article is already sufficiently extended, I have not yet reported the processes by which we have obtained these preparations. These are in general indicated in the essays of Mahla and Perrins. But without going over the various experiments we have tried, and the possible processes that may be pursued, I will briefly state those which we have found most simple and eligible.

1st. The ground root may be exhausted, (and this is best done by percolation,) either by alcohol, dilute spirit, or even water.

If it is desired to obtain and preserve the dark resinoid principle which is abundant in the root, and is not without some medicinal value, then alcohol of ordinary strength must be used adding water at the last to drive out the spirit that it may be recovered. The alcohol must then be distilled off, and the resinoid, (which should be named hydrastin,) be allowed to settle and be removed and dried.

2d. To the clear solution, whether obtained by alcohol or

water, add hydrochloric acid, as long as a precipitate is formed, or until the liquid is distinctly sour.

This combines with both bases, but the muriate of hydrastia (or xanthia) being sparingly soluble in water, or cold alcohol, is precipitated as a bright yellow powder, and is collected and washed on a filter. A precipitate may be obtained by other acids, and by many salts, especially the muriates, but the most satisfactory results are by free muriatic acid. The impure muriate thus obtained is purified by dissolving it in hot alcohol, and treating it with animal charcoal, as described by others. The clear solution on cooling crystallises in beautiful acicular yellow crystals.

From this all the other salts are readily obtained by processes that will suggest themselves to every chemist. They mostly crystallize in needle-shaped or feathery crystals, and are all of a brilliant yellow color.

A little of the pure base *hydrastia* was obtained by withdrawing the acid from the sulphate of baryta, or what succeeded better in our hands, by oxide of lead. The pure alkaloid is uncrystallizable, but combines readily with the acids which we have presented to it.

The other alkaloid which we had named "hydrastin," is still in the mother liquor. From this it is precipitated in its basic condition by an alkali, say soda or ammonia, which combines with its organic acid, or the hydrochloric acid with which it is now combined, and let it fall as a greyish white powder, as it is wholly insoluble in cold aqueous fluids. This is purified by repeated solution in boiling alcohol, and crystallization from it on cooling. It crystallizes in large, quadrangular prisms, with very acute pyramidal summits, and when pure are white or colorless. Although itself is quite insoluble in water, and is easily crystallized, it readily combines with all the acids, and forms salts that are very soluble, and difficultly, if at all, crystallizable: presenting in these respects exactly the reverse of the other alkaloid.

When the preservation of the resinoid principle is not desired, these alkaloids may be more economically obtained by exhausting the ground root with dilute sulphuric acid, instead of alcohol, as the sulphates of both of them are readily soluble, but the process is somewhat more circuitous and complicated, and I will not extend this already too long paper to describe it.

We have isolated the organic acid with which these bases are combined in their normal state, but not in sufficient quantity or purity to enable us to determine whether it be a distinct prin-

ciple, or is identical with some of the vegetable acids already known. If time permits we will investigate the matter farther.

Submitting these remarks, I remain, yours truly,

WM. S. MERRILL, A.M.

Cincinnati, August 25th, 1862.

EXPERIMENTAL RESEARCHES INTO A NEW EXCRETORY FUNCTION OF THE LIVER; CONSISTING IN THE REMOVAL OF CHOLESTERINE FROM THE BLOOD, AND ITS DISCHARGE FROM THE BODY IN THE FORM OF STERCORINE. (*The Seroline of Boudet.*)

BY AUSTIN FLINT, JR., M.D., Professor of Physiology and Microscopy in the Bellvue Medical College, New York; Microscopist to Bellvue Hospital.

“La Cholesterine du sang est elle un de ces produits destines a etre expulses de l'economie, et, par consequent, depourvus d'action immediate sur l'economie elle meme? Sa destination est tout a fait inconnue.” Traite de Physiologie, par F. A. Longet. Paris, 1861. Tome i. p. 488.

This sentence, which was taken from the most elaborate treatise on physiology in any language, published in the centre of physiological science, in 1861, expresses the state of our knowledge with regard to the function of cholesterine. Cholesterine was discovered in 1782, by Poulletier de la Salle, in biliary calculi, and was detected upwards of thirty years ago, in the blood by Denis; but since then, with the exception of researches of a purely chemical nature into its properties, our knowledge with regard to it has not advanced. Its chemical history even, is far from perfect; while its physiological history is unknown. In 1833, Boudet discovered a substance in the blood which he called Seroline; a principle having many characters in common with cholesterine, but heretofore interesting merely as a curious proximate principle, found in excessively minute quantities in the serum of the blood only (whence its name); too minute, indeed, for ultimate analysis. Its function was as obscure as that of cholesterine. In examining the literature of these two substances, we find that cholesterine is frequently not treated of in systematic works on physiology. Seroline is seldom even mentioned. Their function has been so obscure and apparently so unimportant, that theories with regard to it have not been advanced, and the highest chemical authorities, in

speaking of their office in the economy, simply say of one, as of the other, that it is unknown. In the *Chimie Anatomique*, by Robin and Verdeil, we find cholesterine summed up in these words:—

“Le rôle physiologique qu'elle remplit dans l'économie est également inconnu.”

Of Seroline, the same authors say:—

“On ne sait pas comment se forme la seroline, ni quel est son rôle physiologique.”

Though the physiology of these substances is thus obscure, though chemistry has thus far done little for their history, and physiology nothing, certain facts with relation to them would seem to indicate that they are not unimportant in the economy. Cholesterine is found in the blood, bile, liver, nervous matter, crystalline lens, neonium (not in the feces, as incorrectly stated by authors), besides in a number of morbid products. It is found in these situations *constantly*; it appears in the blood as soon as that liquid is found, and continues till the end of life. Its quantity in the blood is increased in certain diseased conditions, and diminished in others. Seroline has been said to exist constantly in the blood, though, till now, it has never been discovered in any other situation. It, like cholesterine, is a constant principle, and having many chemical characters in common. Their function is definite; it is important; and, if the writer do not exaggerate this importance in the enthusiasm of exploring a hitherto absolutely uncultivated field, a knowledge of the functions of these substances will be of incalculable value to the practical physician; and the path thus opened by physiology will lead to a great field for pathological inquiry. *What the discovery of the function of urea has done for diseases which now come under the head of uremia, the discovery of the function of Cholesterine may do for the obscure diseases which may hereafter be classed under the head of Cholesteremia.*

It is not surprising that the function of substances—which have been isolated with great difficulty, *which have never been found in any of the excretions*, which exist in quantity so small, that their investigation seemed to belong especially to the chemist, physiologists having been discouraged, perhaps, from studying them—should be thus obscure. But it is surprising that that important fluid, the bile, the product of the largest gland in the economy, and one of the most constantly found in the animal scale, should be so little understood. This has been

regarded by some as a simple excrement, and by others as not an excrementitious, but a digestive fluid, and so much labor has been expended by physiologists in endeavours to settle this point, that no one has pretended to give an account of its excrementitious function, if it have any, and researches into its digestive function have left us almost entirely in the dark. Blondlot reported an observation on a dog which lived for five years with a biliary fistula diverting, as it is stated, all the bile from the intestines and discharging it from the body. The animal presented no untoward symptoms, died a natural death, no bile found its way into the intestines, but it was all discharged. According to this observation, the bile would appear to be purely an excrement, Schwann, and Bidder and Schmidt, in a large number of experiments, never succeeded in keeping a dog operated on in this way for more than a few weeks; they all died with evidences of inanition. The bile, according to these observations, is concerned chiefly in nutrition; and as it is poured into the upper part of the digestive tube, it is important, probably, in digestion. But Bidder and Schmidt do not satisfy us what its digestive function is; nor does Blondlot say what principle is excreted by it, nor what would be the result of its suppression.

Aside from a few facts, interesting enough, but indicating nothing definite, this is all we know of the function of the bile. But what physiologist does not feel this hiatus in his science; or what practical physician does not feel and know the importance of the function of the bile! It needs no inquiry into natural history, showing the universality, almost, of the liver in the animal scale, to impress upon the physician at the bedside the importance of the bile. A patient is suffering under an obscure ailment, which he may call biliousness or derangement of the liver, and which, in some unexplained way, is relieved by a mercurial purge. The practitioner knows that the bile-secreting function of the liver is important, but does not learn it from the physiologist. Every practitioner must feel that the liver has a function, which must be explained him by the physiologist, before he can avoid treating a large class of diseases empirically.

The bile has an important excretory function, which is liable to many disorders; and this function the writer hopes to be able, in the present article, to describe.

It will be seen by the preceding remarks that the physiological history of the bile remains to be written. The subject is too interesting and important not to engage the mind of the experimental physiologist. It is difficult at first sight to harmonize

statements, to which reference has just been made, of experimenters, equally entitled to consideration, which are diametrically opposed. But of course the philosophical method of studying the bile is first to settle whether it be excrementitious or recrementitious. If the former, what substance is excreted, and where is it formed? If the latter, what function does it perform in any of the processes of nutrition. With the view to harmonize, if possible, in my own mind, the opposite statements of Bidder and Schmidt, and Blondlot, I attempted some time ago to establish biliary fistulæ in dogs. The first experiments were made in New Orleans, in the winter of 1860-61; but were all of them unsuccessful, no animal surviving the operation more than three days. The experiments were discontinued at that time, but were renewed in the winter of 1861-62, at the Bellevue Hospital Medical College. After a number of trials, which were no more successful than those made the previous winter, I succeeded in performing the operation with considerable rapidity and with very little disturbance of the abdominal organs, and in one animal the success was complete.

Exp. 1. The operation was performed by making an incision into the abdomen in the median line just below the ensiform cartilage, about three inches in length. The edge of the liver was carefully raised, the bile duct isolated, and two ligatures applied, one next the duodenum and the other near the junction of the ductus choledochus with the cystic duct, the intermediate portion being excised. The fundus of the gall-bladder was then drawn to the upper part of the wound, an incision made in it of about an inch in length, the bile evacuated, and the edges attached to the skin by points of the interrupted suture. The wound was then carefully closed around the opening into the gall-bladder.

This is nearly the proceeding recommended by Blondlot, who prefers, however, to operate while the animal is fasting, as the gall-bladder is then distended and can be more easily found. I have preferred to operate after feeding, when the gall-bladder is comparatively empty, as there is no great difficulty in finding it, and in evacuating its contents less bile is apt to find its way into the peritoneal cavity, which is one of the causes of the intense peritonitis which follows this operation.

The animal ate well the day after the operation, the bile flowed freely from the fistula and was entirely cut off from the intestine, as shown by *post mortem* examination. No symptoms supervened except those produced by the diversion of the bile

from its normal course. This operation was performed on the 15th of November, 1861, and the animal lived thirty-eight days.

In no observation that I have found recorded has the animal been so free from inflammation consequent upon so serious an operation; and this seemed a most favorable opportunity of determining whether an animal could live with the bile shut off from the intestinal tube and discharged by a fistula. In this case the animal gradually lost flesh and strength, his appetite becoming voracious, until finally he died of inanition; the observation agreeing in every important particular with the experiments of Schwann, and Bidder and Schmidt.

Exp. 2. This experiment was undertaken to ascertain, if possible, the entire quantity of bile secreted in the twenty-four hours. A fistula was made into the ductus communis choledochus, the duct being divided and a silver tube introduced. The experiment did not succeed in point of view in which it was undertaken, and about forty-eight hours after the operation, the tube dropped out. After the removal of the tube the bile ceased to flow externally, and the animal did not appear to suffer any bad effects from the experiment. Thirty days after the operation, the animal having entirely recovered, he was killed by section of the medulla oblongata, and the parts carefully examined. The *post mortem* examination I transcribe from my note-book.

“On *post mortem* examination the liver was found adherent to the diaphragm over the greater part of its convex surface. There were evidences of limited inflammation over the duodenum. The liver itself was normal. Upon opening the duodenum, the papilla which marks the opening of the ductus communis choledochus was normal in appearance. A small silver stilet was introduced into the duct. *For a long time it was impossible to find any communication between the upper part of the duct and the intestine; but at last, after patient searching (knowing that no bile was discharged from the body, and that it was absolutely certain that a communication existed with the duodenum), a communication was found.* In Blondlot's case there probably was a communication re-established which escaped his observation.”

In the remarkable observation reported by Blondlot, in which the animal survived for so long a period, the success is attributed to the fact that the dog was prevented from licking the bile as it flowed from the fistula, Blondlot stating that as soon as the animal was prevented from licking the bile, nutrition began to improve. Anxious to carry out all the precautions which had been

adopted, I so muzzled the animal in Exp. 1, covering the lower part of the muzzle with oiled silk, that it was impossible for him to swallow a drop of the bile. This muzzle was kept on till the death of the animal, but the proceeding had no effect on his nutrition. The bile flowed so freely from the fistula that all the lower part of the animal was covered with it. It was not, however, until I made the *post mortem* examination in the second experiment that I was able to see the difficulty which I had experienced in harmonizing the observations of the different experimenters I have quoted. In the lower animals—in dogs, at least—ducts have a remarkable tendency to re-establish themselves. Any one who has operated much upon the glands can hardly fail to have noticed this fact. The pancreatic duct, for example, after having been divided and a tube introduced, becomes invariably re-established after the simple removal or dropping out of the tube. It was so with Exp. 2, in which the tube dropped out of the bile duct. The duct undoubtedly became re-established, for no bile flowed externally for nearly a month, the animal enjoying perfect health, and the fluid necessarily being emptied into the intestine; yet it was with the greatest difficulty that the communication could be found with the probe, and it was only after a long searching, knowing that there must be communication, that it was discovered at all. Taking into consideration the great difficulty I had in finding the passage in this instance, and after having carefully examined the case reported by Blondlot, I have concluded that a communication existed in his experiment which escaped observation, but by means of which a large quantity of the bile found its way into the intestine.*

With regard to the digestive function of the bile, it is sufficient to state here that the experiments which I have made on this subject have led me to believe that this fluid has an important office in connection with the function of digestion—one, indeed, which is essential to life. The nature of its office, however, is not understood, and can only be settled by a long

* An account of this experiment is to be found in an article entitled "*Essai sur les Fonctions du Foie et de ses annexes par N. Blondlot.*" 1846. The *post mortem* examination of the animal, made more than five years after the establishment of the fistula, was published in a little memoir complementary to the preceding, entitled "*Inutilité de la Bile dans La Digestion.*" 1851. It was not contemplated to enter into a full discussion of the views of Blondlot and others on the uses of the bile in digestion. That subject will be taken up in another paper in which the digestive properties of the bile will be mainly considered. In this connection it is proposed to take up only the excrementitious function of the bile.

and carefully executed series of experimental researches which would probably involve the whole subject of digestion. This I hope to be able to present in another paper. There is, however, another function of the bile entirely distinct from the preceding. It is the separation from the blood of the cholesterine, an excrementitious substance, which is formed by the destructive assimilation of certain tissues of the body. Though not discharged from the body as cholesterine, it being first changed into another substance, it is separated in that form from the blood and poured into the intestine by the ductus communis choledochus. This new excretory function of the bile will form a great part of the subject of this paper; the recrementitious function, which is necessary to complete the physiological history of this fluid, being deferred.

We will find the cholesterine to be the most important excrement separated by the liver, as the urea is the most important one separated by the kidneys; and the study of this substance will necessarily involve the depurative function of the liver. I will therefore begin with the cholesterine, and endeavor to show where it is formed in the economy, by following the blood in its passage through various organs. This will necessarily involve a description of the chemical processes which have been employed in its extraction. I will then endeavor to show where the cholesterine is removed from the blood, by the same method of investigation. The next step will be to follow it out of the body, and study the change which it undergoes in its passage through the alimentary canal. Having described the process of formation in the tissues, separation from the blood by the liver, and final discharge from the body, I will endeavor to show, finally, the effects of interruption of this function of the liver upon the economy. This will lead us into pathology, and a host of diseases will arise which may be dependent on a disturbance of the excretory function of the liver. We will be enabled to draw the line more closely between conditions in which there is resorption simply of the innocuous coloring matter of the bile, and those diseases in which there is a failure to separate the excrements from the blood. These conditions, it is well known, are widely different as to gravity, and the distinction between them is of great importance. The latter condition, characterized by the retention of cholesterine in the blood, will be treated of under the name of *Cholesteremia*.

CHOLESTERINE.

Chemical characters.—Cholesteroline is a non-nitrogenized substance, having all the properties of the fats, excepting that of saponification with the alkalies. Its chemical formula is usually given as $C^{25}H^{22}O$. It belongs to a class of fatty substances which are non-saponifiable, which have been grouped by Lehmann under the name of lipoids. This class is composed of cholesteroline and seroline, which are animal substances; castorine, from the *castoreum*, and amberin, from amber. To this he adds a substance discovered in a uterine tumor by Busch, called inosterine. Cholesteroline is neutral, inodorous, crystallizable, insoluble in water, soluble in ether, very soluble in hot alcohol, though sparingly soluble in cold. It burns with a bright flame, but is not attacked by the alkalies, even after prolonged boiling. When treated with strong sulphuric acid, it strikes a peculiar red color, which is mentioned by some as characteristic of cholesteroline. I have found that it possesses this character in common with seroline.*

Forms of its crystals.—Cholesteroline may easily and certainly be recognized by the form of its crystals, the characters of which can be made out by means of the microscope. They are rectangular or rhomboidal, exceedingly thin and transparent, of variable size, with distinct and generally regular borders, and frequently arranged in layers with the borders of the lower ones showing through those which are superimposed. This arrangement of the crystals takes place when the cholesteroline is present in considerable quantity. In pathological specimens they generally are few in number, and isolated. The plates of cholesteroline are frequently marked by a cleavage at one corner, the lines running parallel to the borders; frequently they are broken, and the line of fracture is generally undulating. Lehmann attaches a great deal of importance to measurements of the angles of the rhomboid; according to this author, the obtuse angles are $100^{\circ} 30'$, and the acute $79^{\circ} 30'$. I have lately examined a great number of specimens of cholesteroline, extracted from the blood, bile, brain, liver, and occurring in tumors, and am confident that the crystals have no definite angle. Frequently the plates are rectangular, and sometimes almost lozenge-shaped. It is by the transparency of the plates, the parallelism of their borders, and their tendency to break in parallel lines, that we recognize them as formed of cholesteroline.

* This reaction of the seroline is mentioned by Berard, in the "*Cours de Physiologie*," tome iii. p. 117.

Lehmann seems to consider the tablets of this substance as regular crystals, having invariable angles. From examination during crystallization, I am disposed to think that they are not crystals, but fragments of micaceous sheets, which, from their extreme tenuity, are easily broken. In examining a specimen from the meconium, which I extracted with hot alcohol, I was able to see a transparent film forming on the surface of the alcohol soon after it cooled; this, on microscopic examination, *in situ*, disturbing the fluid as little as possible, was found to be marked by long parallel lines. When the fluid had partially evaporated, it became broken and took the form of the ordinary crystals of cholesterine, but they were larger and more regular. The beauty of the tablets at this stage could not be adequately represented. They were exceedingly thin, and regularly divided into delicate plates, with the characteristic corner cleavages of the cholesterine; and, as the focus of the instrument was changed, new layers, with different arrangement, were brought into view. I have attempted to give an idea of the form of these tablets in Fig. 1; but it is, of course, impossible to represent their pale, but beautifully distinct borders. As has been remarked by Robin, the borders of these crystals can but be imperfectly imitated by a line; there is no line in the object itself, but the edge shows where the tablet ceases. (See Fig. 1.)

The crystals are generally colorless, but when present in colored fluids, may take a yellowish tint, or even become very dark. They may still be recognized, however, by the characters of form just described.

Crystals of cholesterine melt at 293° Fahr., but are formed again when the temperature falls below that point. According to Lehmann, they may be distilled *in vacuo* at 680° without decomposition. The determination of the fusing point is one of the means of distinguishing it from seroline, which fuses at $90^{\circ} 8'$.

Situation of the Cholesterine.—Most authors state that the cholesterine is found in the bile, blood, liver, brain, and nerves, crystalline lens, meconium, and the fecal matter. I have found the cholesterine in all these situations invariably, excepting the feces, where it was seen but once after a number of examinations; and in studying the works of those who have investigated this substance, I can find no one who has found it in the normal feces. It is found in large quantities in the meconium, from which, perhaps, it is most easily extracted in a state of purity, and has been extracted from the feces of animals in a state of hibernation; but though it may occasionally be found in the feces

in disease, and in animals after long fasting, I am confident that it never occurs in the ordinary conditions. The analysis of the fecal matter is so unattractive, that it has been very much neglected by chemists; and until a few years ago, when an elaborate analysis was made by Mareet, to which reference will hereafter be made, the analysis of Berzelius formed nearly all our data on this subject. Cholesterine forms the greater part of biliary calculi, which indeed consists generally of nothing but cholesterine, coloring matter, and mucus. It is found in a large number of morbid deposits. Few cases of cancer are examined without discovering tablets of cholesterine. It is very abundant in encysted tumors. According to Robin, atheromatous deposits, which are found in the middle coats of the arteries, are often composed of cholesterine. It sometimes forms distinct tumors or deposits in the substance of the brain. I lately had an opportunity of examining a tumor from the brain, at the Bellevue Hospital, which consisted of nearly pure cholesterine. It has often been found in a fluid of hydrocele, in the fluid of ovarian cysts, in crude tubercle, in epithelial tumors, and in pus. The proportion in which it exists in the fluids of the body is very small. I have made a number of quantitative analysis of the blood, the results of which I give in the following table, with some of the analysis which have been made for this substance. I also give the quantity which I have found in the other situations in which it is found. The variations in different parts of the circulation and in diseased conditions will be given in another table. The quantity in the brain and crystalline lens has, I believe, never before been estimated:—

Table of Quantity of Cholesterine in various Situations.

Situation.	Observer.	Quantity examined.	Cholesterine per 1,000 pts.
Venous blood (male)	Becquerel and Rodier.		0.090
Do. (female)	Becquerel and Rodier.	<i>grains.</i>	0.090
Do. (male æt. 35.)	A. Flint, Jr.	312.083	0.445
Do. (male æt. 22.)	A. Flint, Jr.	187.843	0.658
Do. (male æt. 24.)	A. Flint, Jr.	102.680	0.751
Bile (human)	Frerichs.		1.600
Do. (normal of ox)	Berzelius.		1.000
Do. (human)	A. Flint, Jr.	224.588	0.618
Meconium.	Simon.		160.000
Do.	A. Flint, Jr.	170.541	6.245
Brain (human)	A. Flint, Jr.	159.753	7.729
Do. do.	A. Flint, Jr.	150.881	11.456
Crystalline lens (ox)*	A. Flint, Jr.	135.020	0.907

* In this examination four fresh crystalline lenses of the ox were used.

Form under which the cholesterine exists in the organism.—In the fluids of the body cholesterine exists in a state of solution, but by virtue of what constituents it is held in solution, is not entirely settled. It is stated that the biliary salts have the power of holding it in solution in the bile, and that the small amount of fatty acids which are contained in the blood hold it in solution in that fluid, but direct experiments on this point are wanting. In the nervous substance and in the crystalline lens it is united "*molecule a molecule*" to the other elements which go to make up these tissues. After it is discharged into the intestinal canal, when it is not changed into stercorine, it is to be found in a crystalline form, as in the meconium, and in the feces of animals in a state of hibernation. In pathological fluids and in tumors, it is found in a crystalline form, and may be detected by microscopic examination.

Process for the extraction of cholesterine.—Without describing the processes which have been employed by other observers for the extraction of cholesterine from the blood, bile, and various tissues of the body, I will confine myself to a description of the process which I have found most convenient to employ in the analysis I have made for this substance. In analysis of gallstones the process is very simple; all that is necessary being to pulverize the mass, and extract it with boiling alcohol; filter the solution while hot, the cholesterine being deposited on cooling. If the crystals be colored, they must be redissolved, and filtered through animal charcoal. This is the proceeding employed by Poulletier de la Salle, Fourcroy, and Chevreul. It is only when this substance is mixed with fatty matters, that its isolation is a matter of any difficulty. In extracting cholesterine from the blood, I have operated on both the serum and clot, and in this way have been able to demonstrate it in greater quantities in this fluid than has been observed by others, who employed only the serum. The following is the process for quantitative analysis, which I determined upon after a number of experiments.

The blood, bile, or brain, as the case may be, is first carefully weighed, then evaporated to dryness over a water bath, and carefully pulverized in an agate mortar, so as to collect every particle. The powder is then treated with ether, in the proportion of about a fluidounce for every hundred grains of the original weight, for from twelve to twenty-four hours, agitating the mixture occasionally. The ether is then separated by filtration, throwing a little fresh ether on the filter so as to wash through every trace of the fat, and the solution set aside to evapo-

rate.* If the fluid, especially the blood, have been carefully dried and pulverized, when the ether is added it divides into a very fine powder, and penetrates every part. After the ether has evaporated, the residue is extracted with boiling alcohol, in the proportion of about a fluidrachm for every hundred grains of the original weight of the specimen, filtered, while hot, into a watch-glass, and allowed to evaporate spontaneously. To keep the fluid hot while filtering, the whole apparatus may be placed in the chamber of a large water-bath, or, as the filtration is generally rapid, the funnel may be warmed by plunging it into hot water, or steaming it, taking care that it be carefully wiped. We now have the cholesterine mixed with a certain kind of saponifiable fat. After the fluid has evaporated, we can see the cholesterine crystallized in the watch-glass, mingled with masses of fat. This we remove by saponification with an alkali; and for this purpose, we add a moderately strong solution of caustic potash, which we allow to remain in contact with the residue for from one to two hours. If much fat be present, it is best to subject the mixture to a temperature a little below the boiling point; but in analysis of the blood, this is not necessary. The mixture is then to be largely diluted with distilled water, thrown upon a small filter, and thoroughly washed till the solution which passes through is neutral. We then dry the filter, and fill it up with ether, which, in passing through, dissolves out the cholesterine. The ether is then evaporated, the residue extracted with boiling alcohol, as before, the alcohol collected on a watch-glass, previously weighed, and allowed to evaporate. The residue consists of pure cholesterine, the quantity of which may be estimated by weight.

The accuracy of this process may be tested by means of the microscope. As the crystals have so distinctive a form under the microscope, it is easy to determine by examining the watch-glass, whether it has been obtained in a state of purity. In making this analysis quantitatively, it is necessary to be very careful in all the manipulations; and for determining the weight of such minute quantities, an accurate and delicate balance, one, at least, that will turn with the thousandth of a gramme, carefully adjusted, must be employed. With these precautions, the quantity of cholesterine in any fluid or solid may be determined with perfect accuracy. The quantity of cholesterine may be estimated in from fifteen to twenty grains of blood. In analyzing the brain and bile, I found it necessary to pass the first

* The ether may be preserved by distillation, instead of allowing it to evaporate, but the small quantity usually employed this is hardly worth while.

etheral solution through animal charcoal, to get rid of the coloring matter. In doing this, the charcoal must be washed with fresh ether till the solution which passes through is brought up to the original quantity. The other manipulations are the same as in examinations of the blood. In examining the meconium, I found that the cholesteroline which crystallized from the first alcoholic extract was so pure that it was not necessary to subject it to the action of an alkali.

I am aware that in describing the process for the extraction of cholesteroline I have entered into details which would be superfluous for the practical chemist. But the extraction of this substance from the blood is so simple, and the results of the examination of the blood in different parts of the circulatory system have been so striking and important, that I cannot but indulge the hope that the observations which follow will be verified by those who may not be skilful practical chemists. Almost any one is competent to make a quantitative analysis of the blood for cholesteroline. It simply requires six days for the process, and a number of analysis may be carried on at the same time. It requires one day, after the blood has been dried and pulverized, for the ether to act upon it; the next morning it is filtered and set aside; the next morning it will be dry, and may be extracted with alcohol, and set aside to evaporate; the next morning it may be treated with potash, filtered, and the filter washed with water; the following day it may be washed with ether, and set aside to evaporate; the following day it will have evaporated, and may be extracted with hot alcohol; and the following day the alcohol will have evaporated, and the specimen may be examined by the microscope and weighed. All that is required is a little care in the performance of these manipulations—which one with a slight acquaintance with operations in chemistry may perform at once, and one or two trials will enable a novice to execute—and accuracy in weighing, which is, indeed, the most delicate part of the process.

History of cholesteroline.—A brief sketch of the history of this substance may not be uninteresting. It was first obtained by Poulletier de la Salle, in 1782, who extracted it from a biliary calculus. He communicated his observations to Fourcroy, who published them, after having verified his experiments, the death of the discoverer preventing him from making his observations public. Afterwards, in examining an old, hardened, liver, Fourcroy found a concrete, oily substance, analagous to that discovered by Poulletier. He imagined that the liver had become changed into a substance resembling spermaceti. The

cholesterine was afterwards found in gall-stones, by Vieq d' Azyr, by Jaquin, Titus, and Kreysig. In 1791, Foureroy described a substance which he called adipocire, found in bodies at the *cimetiere des Innocents*, which he likened to spermaceti and to cholesterine. He always, however, made a distinction between these substances; calling the cholesterine *crystallizable adipocire*. In 1814, Chevreul established the difference between the adipocire and the cholesterine, giving a full description of the cholesterine. He extracted it from the bile of the human subject, of the bear, and of the pig.

After that time a number of chemists found it in the gall-stones and intestinal concretions. Lassaigne found it in a cerebral tumor, Guerard in hydatid cysts of the liver, Morin in the liquid from an abdominal tumor, Caventou in the matter from an abscess under the malar bone, and a number of others in tumors in various situations. In 1830, it was discovered in the blood by Denis, and afterwards described by Boudet, who wrote an elaborate article on the composition of the serum of the blood in 1833, in which he describes the cholesterine and a new substance which he called *seroline*.* It was also detected in normal blood by Lecanu and Marchand. Couerbe, who made elaborate researches into the chemical composition of the cerebral substance, pointed out the existence of cholesterine in the brain. Lebert found it in the substance of cancerous tumors, Curling found it in the fluid of hydrocele, Simon extracted it from the meconium, and Preuss discovered it in the substance of crude tubercle. Of late authors, Becquerel and Rodier have been most extended in their investigation of this principle.† They have made a number of careful quantitative analysis of the blood for this substance in health and disease. Their observations will be more particularly referred to further on.‡

[Continued in the next Number.]

* Boudet, *Nouvelles Recherches sur la composition du serum du sang humain*. *Annales du Chimie et de Physique*, tom. lii. p. 337.

† *Traite de Chimie Pathologique appliquee a la medecin pratique*, par M. Alf. Becquerel, professeur agrege, etc., et par M. A. Rodier, Docteur en Medecine, etc. Paris, 1854, and *Recherches sur la composition du sang*. Paris, 1844.

‡ The history of the cholesterine was mostly compiled from the excellent work of Robin and Verdeil, the *Chimie Anatomique*.

POISONING FROM THE YELLOW TIGER LILY.

OCT. 27th.—*Case of poisoning from the Pollen of the common yellow Tiger Lily.*—Dr. JEFFRIES WYMAN read the following report of a case by Dr. R. T. Warren, of Waltham, Mass.

“Mrs. B. was making a call at a neighbor’s, having with her a little daughter, 4 years old. The child was ‘perfectly well,’ the mother said, and had been so. It played with another little girl, and did not go out of the room during the call. The little girl came to Mrs. B., requesting her to go and see Fanny, the name of the child. Mrs. B. went, and found Fanny rubbing her nose very violently. Soon there was a profuse discharge of mucus from the nose, colored yellow. The mother questioned the child, and ascertained that she had reached her hand out of the window, taken an anther from a tiger lily, and passed it into the right nostril. The child pointed out the lily, and the mother found just one anther missing. Mrs. B. was particular in her inquiries, and the child was positive in stating what she had done. Vomiting soon followed the discharge of mucus from the nose. This consisted at first of chyme, having no appearance of undigested food, and was followed by vomiting of mucus, colored yellow, the same as the discharge from the nose. The child then wanted to go to sleep. The mother took her home, and then sent for me. I saw her at 6, P. M., Wednesday, August 13, about an hour after the anther was passed into the nose. The child appeared sleepy, but was easily roused, and was intelligent. Vomiting of mucus, tinged yellow, occurred while I was present. The yellowness did not seem to be caused by bile. The symptoms did not seem at all alarming. Not aware that the tiger lily possessed any poisonous properties, I felt no anxiety, and went away, after prescribing remedies, requesting to be called if anything new occurred. I was sent for about 10, P. M., four hours afterwards. Evacuations of the bowels had occurred; at first of natural appearance, then followed discharges colored yellow, the same as the vomiting and the discharge from the nose, and at last bloody discharges. The vomiting had occurred occasionally, and this at last became bloody. The child was dull, sleepy, and languid. I prescribed astringents, opiates in the form of paregoric, and brandy and water, if the languor should increase. I saw her on Thursday morning. A dejection, quite bloody, occurred between 1 and 2 o’clock, A. M., and after that the dejections were checked. She was relieved of the vomiting. The child seemed languid, rather sleepy; no wandering. The eyes had a dull, reddish injection. At 4, P. M., same

day, appearance of the child much the same as in the morning. The right nostril was nearly closed; membrane of both nostrils very pale. Some discharge of clear, thin mucus. Friday morning.—The child looked brighter. Some reddish injection of the eyes. No urine had been passed during the last twenty-four hours. Slight feverish symptoms. No delirium. 7, P.M., Friday.—No urine had been passed. Several dejections, dark colored, very offensive. Some fever during the day, slight delirium and startings. Some nausea. Was called to her about 1 o'clock, Saturday morning. Shortly before she had a large, dark-colored, very offensive discharge, and immediately began to sink. She died a little before 4 o'clock, about fifty-nine hours after passing the anther into the nostril."—*Boston Journal*.

NARCOTICS.

BY JOSEPH BATES, M.D.

ATROPA BELLADONNA.

Whooping-Cough.—Dr. Stille remarks "although previously employed in the treatment of this disease, belladonna was first systematically used to cure whooping-cough, by Schæffer and Wetzler, in 1810; the latter treated thirty children, all of whom were cured, between the eighth and fifteenth day after beginning to take the medicine. He found the most favorable period of the disease for commencing the treatment was between the sixteenth and twentieth days, and the proper dose to be a quarter of a grain of the root, morning and evening, for a child under one year of age. These results were confirmed by many writers, and particularly by Meglin, and by Kahleiss, in 1827. Several years later, Dr. Samuel Jackson, then of Northumberland, Pa., prescribed the remedy in numerous cases of whooping-cough, and with complete success, directing fractional parts of a grain of the extract at intervals of three hours, until dilatation of the pupil took place, when the medicine was omitted altogether, or given in smaller doses. This treatment was preceded by antiphlogistic measures. Constant, in presenting a summary of his observations, at the Children's Hospital, in Paris, in regard to the treatment of whooping-cough, gives preference to belladonna over all other means; and his report shows substantial ground for this preference, inasmuch as the progress and decline of the disease corresponded with the suspension and resumption

of the remedy. Dr. Thompson, of London, bears a similar testimony upon this subject. M. Fuster, Professor in the University of Montpellier, employed vapors of an infusion of belladonna leaves by inhalation, and with uniform success." Dr. Corson, of Norristown, Pa., says: "During the last seventeen years, I have given the extract of belladonna to hundreds of patients, from ten months to fifty years of age, and am firmly convinced that it has a greater control over whooping-cough than any other remedy in common use." Many observers have found it almost inefficacious, (says Stille) at the commencement of an epidemic, but very successful during its decline. So Ingmann states, that under such circumstances, it far surpasses all other medicines. M. M. Rilliet and Barthez do not appear to have used it, but call attention to the fact that Wendt and Gœlis have both seen mischievous consequences result from its use. Stille says: "No other writers allude to such effects, except as following an injudicious exhibition of the medicine, or the omission to suspend it when dilatation of the pupil comes on; even these disquieting symptoms are stated to have been temporary."

Bretonneau advised to be administered to a child of five years old, immediately before breakfast for two days, a pill containing one-twelfth of a grain of the extract; if no effect is observed by the third day, he raises the dose to one-eighth of a grain. He advises on the fifth day the same dose, and on the eighth day, if no effects are produced, one-third of a grain may be given, and continued for three days, or gradually increased until the pupils are effected, or the cough declines; at that point the dose should, for a time, remain the same. M. Trousseau remarks that insomnia is apt to be produced by belladonna in this disease, and he usually gives opium in combination with it. Cases of whooping-cough are reported, which were distinctly palliated when this drug was taken, and aggravated when withheld. On the whole, says Dr. Stille, it would appear that belladonna is positively curative in whooping-cough which has passed the inflammatory stage, but that in certain epidemics, it has signally failed, in the hands even of those who have before prescribed it with success. "The practitioner should be careful to watch its effects, lest they become alarming to the patient's family, or inflict even temporary mischief."

Belladonna, applied to a blistered surface, has been promptly and completely efficient in some cases of laryngitis, which were more or less of a spasmodic character.

Braithwaite's Retrospect, Part 42, p. 98, contains an article on the successful treatment of whooping-cough, by increasing

doses of sulphate of zinc and extract of belladonna, by Dr. Fuller, physician to St. George's Hospital.—[In the *Medico-Chirurgical Transactions*, Dr. Fuller publishes a paper on the tolerance of belladonna by children. The following abstract of a paper read before the Harveian Society of London, contains a sufficient epitome of that article.] Dr. Fuller commenced his paper by calling attention to the commonly received opinion, as stated in most books on the subject, that, "Whooping-cough must run a certain course." He combatted this opinion by reference to the results of his own experience, and then proceeded to point out the causes which had led to its general adoption. Among these he mentioned the inefficiency of the treatment ordinarily employed, and the neglect of all measures likely to subdue the tendency to spasm on which the continuance of the whoop depends. Dr. Fuller regarded the complaint as consisting essentially of bronchitic irritation, usually not very severe, accompanied by reflex spasm of the air-passages, and expressed his opinion that in most cases the spasmodic symptoms are those which demand our most serious attention. Not only is the spasm a most painful symptom, but is one which may give rise to life-long mischief. His object, therefore, had always been to subdue the spasm as speedily as possible, and the practice which, until the last twelve months, he had found most successful for the purpose, was the administration of sulphate of zinc in rapidly increasing doses. (This Part was published in 1861.)

Dr. Fuller then referred to the discovery he had made as to the tolerance of belladonna by children, which is recorded in a paper published in the *Medico-Chirurgical Transactions*, and he briefly stated the facts which are there detailed in *extenso*, as to the amount of belladonna which may be given with safety, and the conditions which should be observed in its administration. The conditions he specified were, first, the remedy should be given at least four times daily, and should be administered at first in small doses, which may be increased day by day, or on alternate days, by a corresponding amount. He pointed out that mere dilatation of the pupils need not be regarded as a bar to its administration, and stated that if the precautions just referred to are observed, the daily dose of the extract of belladonna may be safely increased up to a scruple, or half a dram, without the production of any unpleasant symptoms. He then proceeded to state that he had brought these facts to bear on the treatment of whooping-cough, and from the conjoint use of sulphate of zinc and extract of belladonna, in rapidly increasing doses, had obtained results exceeding his most sanguine

expectations. Rarely had he found the whoop to last above twenty-one days, and in some instances it had subsided in ten days. The mode in which Dr. F. proceeds, is to give the zinc and belladonna as soon as the whoop declares itself. If the attack is accompanied by much febrile excitement, and bronchitis, and irritation, he prescribes a cough-drop containing a dram of antimonial wine and a dram of ippecacuanha wine to two ounces of water, and, if necessary, applies a blister to the chest. Of the cough-drop a larger or smaller amount is given, according to circumstances. To children under three years of age, he usually begins by giving one-sixth of a grain of belladonna, and half a grain of sulphate of zinc, four times daily; and to children above that age one-quarter of a grain of extract of belladonna and a grain of sulphate of zinc. These remedies are given in a solution in water, and the dose of each substance is increased by a corresponding dose daily, or on alternate days; so that the child by taking one-quarter of a grain of the extract and one grain of the zinc, at a dose, would be taking one grain of the extract and four grains of the zinc at a dose, either on the fourth, the sixth, or the eighth day, according to the rapidity with which the dose is increased. Dr. F. concluded by citing cases illustrative of the value of this treatment; assured the members of its safety, and urged its general adoption.

In *Braithwaite's Retrospect*, Part 21, p. 141, M. Debregne has a paper on this subject. He says, "belladonna has been eminently useful in the epidemics of whooping-cough which he has observed; but the success attending its administration depends on the observance of the following rules. The dose of belladonna should be proportioned to the number of months representing the child's age; and the quantity to be taken in twelve days, (the ordinary duration of treatment,) will be five centigrammes (three-fourths of an English grain) multiplied by the number of months. Thus, for an infant six months old, the dose will be thirty centigrammes (four and a-half grains) in twelve days; for one of two years and a-half, the dose will be one and a-half gramme (twenty-three grains) in the same period. For children above six years of age, the quantity of three grammes (forty-six and one-third grains) is not exceeded. The medicine is always given three times in the day. For instance, the prescription for a child three years old would be powder of the root of belladonna, two grammes; to be divided equally into twelve powders, of which one is to be given daily, in three divided doses. If there be vomiting, it should be given immediately after a fit of vomiting and coughing. Recourse should

not be had to this remedy, until the inflammatory element has been overcome by leeches, emetics, etc.; in other words, it is not to be employed before the tenth or fifteenth day, when the cough will have assumed its specific character.

Dysmenorrhœa.—Dr. Golden Bird found this agent very efficacious when there was no organic disease of the uterus, but shreds were discharged at the menstrual period, and severe pain was experienced at the same time in the hypogastric region. When the patient is anæmic or leucophlegmatic, one-fourth of a grain of extract of belladonna with one grain of sulphate of zinc may be given every two or three hours until the pain ceases. For plethoric patients ipecacuanha is more suitable than the sulphate of zinc. Between the catamenial epochs, purgatives should be administered, and other means taken to improve the general health. Bretonneau employed this remedy topically under similar circumstances. Dr. G. Bird's paper on dysmenorrhœa treated with belladonna was published in the *London Medical Times*, also in the *Boston Med. and Surg. Journal*, Vol. 30, p. 282. Dr. B. says in cases where the pain is seated over the region of the uterus, in the lower part of the abdomen, he has given the belladonna internally, taking care that the extract is properly prepared, and has invariably found it successful; great relief is experienced at the next menstrual period; greater still at the succeeding one, and a cure is finally accomplished. By removing (says Dr. Bird,) the irritable condition of the uterus, and curing the dysmenorrhœa, the pseudo-pleuritis and pseudo-peritonitis, for which bleedings were formerly, unfortunately, so largely practiced, will soon get well. The cases in which the pain is seated chiefly in the loins, do not yield to the employment of belladonna. This, Dr. Bird considered was owing to congestion of the uterus. Fortunately (he says) the cases that are most remarkable are the most frequent.

Dr. Walker (as stated in the *Lancet*, March 23. 1844, p. 27.) has found belladonna alone, both externally and internally, in cases of dysmenorrhœa to afford temporary relief. He applies it externally in the form of a plaster of the simple extract spread on adhesive plaster.

He has seen the belladonna in conjunction with hydrocyanic acid, in the proportion of one-quarter to half a grain of the extract to three minims of Scheele's preparation, four or five times a day, of great benefit in cases of severe gastrodynia.

Constipation.—Trousseau declares belladonna to be the remedy par excellence for habitual constipation. It does not purge

nor produce loose stools, but only renders defecation easier, and sometimes in the dose of a quarter of a grain the extract will produce several stools. As soon as the bowels become regular the dose of the medicine should be gradually diminished. Cases illustrative of the efficacy of this treatment are reported by Fiessenger, who, however, made use of suppositories containing the extract of belladonna, by Blacke, and by Flewry. (Stille).

Copland recommends small doses of belladonna in alvine obstructions (p. 477).

Strangulated Hernia.—In truly spasmodic affections, or those in which there is abnormal, and, for the most part, paroxysmal muscular contraction, belladonna has been extensively and beneficially employed. David reports two cases in which the internal use of belladonna led to the reduction of strangulated hernia, which seemed to demand an operation. He gave half a grain of the extract every half hour. In one case three, and in the other four doses were taken.

In the *Gazette Hebdomaire*, there is reported a case of inguinal hernia, which was relieved after taxis had failed, by the administration of the extract of belladonna, in three or four grain doses every half hour. The tincture of belladonna was also employed locally by means of a flax-seed poultice.

In the same journal there is also a report of a case in which belladonna was administered, with very great relief to the patient. In this there was no protrusion of the bowel, but, from the symptoms, obstinate constipation, great pain, stercoraceous vomiting, etc., it was evident that there was complete occlusion of the bowel. The belladonna in this case was employed after an operation for artificial anus had been decided upon. The remedy was used in the form of an ointment, by friction; and as soon as complete intoxication was induced its good effects were preceptible.

American Journal, Vol. 15th, p., 533: Dr. Frankel has successfully treated six cases of strangulated hernia, with the extract of belladonna. Five of these cases were crural hernia in females. The sixth was an umbilical hernia.

The author was called upon to visit a boy some ten years of age, July 8th, 1862; found the little patient in great distress; and upon examination of the abdomen readily discovered the cause of his distress, which was inguinal hernia. I made every endeavor to reduce it, but failed in accomplishing it. I then made an ointment of belladonna and lard, equal parts, and spread a small plaster, and applied it to the hernial tumor, and waited its results. In less than half an hour my patient became

quiet and easy; and his pupils some dilated. I then directed my attention to the hernia, and found a spontaneous reduction. The plaster was immediately removed, and the surface cleansed with tepid water; nevertheless the pupils remained dilated for twenty-four hours.

Rigidity of the os uteri during labor.—It was first recommended to overcome this condition by Chaussier. He as well as several other writers have testified to its virtues in overcoming this annoying incident of parturition.

This condition of the os uteri may readily be controlled by an ointment made of belladonna and lard, and with the finger apply it immediately to the mouth of the uterus.

In the *American Med. Monthly*, may be found a paper of B. F. Barker's on belladonna shortening labor. Dr. Barker gives a table of 147 cases of labor, in which this remedy had been used for dilating the os externum by comparatively painless contractions. The extract was administered in quarter-grain doses, two or three times daily, commencing about two weeks previous to the close of gestation.

Plethoric patients took tartar emetic with belladonna—three grains of the former, eight of the latter, in two ounces of syrup of orange peel (one ounce of the tincture of orange peel, and one ounce of water), a teaspoonful three times a day. With some the following formula was used: compound tincture of cinchona, three ounces; syrup, one ounce; ext. of belladonna, eight grains. Other combinations for special indications. A very great difference appeared in the susceptibility of patients to the influence of the agent, owing to the difference in the purity and strength of the article. One would seem to have double the potency of another, without any corresponding difference in the appearance, color, or odor. In some cases the dose had to be diminished, but in most instances it could be gradually doubled, or even tripled. Dryness of the throat, slight uneasiness or giddiness of the head, dimness of the vision, are indications to diminish the dose. Not one of the children was still-born, and in none of the cases was there post-partum hæmorrhage or retention of the placenta. In one the function of lactation was entirely absent; in two others the mammary secretion did not appear until the fifth day.

The following cases are mentioned in the *Boston Medical and Surgical Journal*, Vol. 30, p. 502:—"Premature delivery. Six and a-half months gone. Called twelve hours after birth of fœtus, to deliver placenta. Placenta adherent. Uterus collapsed upon the same. Could not dilate the os tincæ with my

finger. Used the ungt. belladonna to the os and neck; in thirty minutes the uterus was dilatable. Delivered with the blunt hook. Patient had a quick recovery."

Another:—"Protracted labor; rigidity of the os tincæ; alarming hiccough and vomiting, with sudden cessation of expulsive pains. The slightest touch of the finger to the os, or pressure of the child from change of position, would induce the hiccough and increase the vomiting. Applied the ungt. to the os tincæ. In five minutes the hiccough ceased, the vomiting soon followed, the rigidity relaxed, and the patient fell into a quiet sleep. With the aid of savin and ergot, in an hour and a-half the patient was delivered."

The author, R. P. Stevens, closes by stating that in his materia medica there is not a more potent drug than the atropa belladonna.

Laryngitis.—Dr. Stille says that belladonna applied to a blistered surface, appears to have been promptly and completely efficient in some cases of laryngitis which displayed more or less of a spasmodic element; and as an internal remedy for nervous coughs, especially for those which, independently of any local disease of the respiratory apparatus, disturb the rest at night by their persistence and violence.

Richard Hughes (Surgeon to the Brighton Orthopædic Hospital,) has a publication on the influence of belladonna on the pneumogastric nerve, in *Braithwaite*, part 42, p. 296. He closes his able communication as follows:—"The practical results from the above facts will be, that we shall be led rationally to the use of belladonna and its congeners in all affections of the pneumogastric nerve. Laryngismus stridulus must, therefore, be added to the above mentioned morbid conditions. I have lately used belladonna (in combination with nitric acid) in every case of common cough which has come under my notice, and with far more marked success than I have obtained from any other remedy. I trust that a more extended trial may add fresh support to the view thus advocated."

Tetanus.—Dr. Hutchinson has reported many cases of traumatic tetanus, as cured by the extract of belladonna. Dr. H. reports that the specific action of the medicine upon the pupils was followed by an abatement of the spasms, but this was not until the dose was increased from half a grain or a grain of the extract every three hours, to four grains every two hours. It was then gradually diminished. The treatment continued about one month.—(*Am. Jour. of Med. Sci.*, Apr. 1858, p. 340.)

Vial mentions three cases of cure by this agent, and Ernest

reports others. Belladonna is said to have cured idiopathic form of tetanus. The following case is taken from the *Gazette Medicale*;—published also in *Braithwaite's Retrospect*, Part 22, p. 90.

“M. Bresse, surgeon at the Military Hospital at Rennes, proposed, in 1848, the treatment of traumatic tetanus by the application of tincture of belladonna, and reported a case, in which it had been successfully employed in the *Gazette Medicale de Paris*, of Sept. 30, 1848. M. Bresse has now placed on record another case, which has come under his notice. The patient, one of the Garde Mobile, received a wound on the 20th of March; tetanic symptoms appeared on the 5th of April. Frictions of belladonna were commenced on the 5th, and by the 12th the patient was out of danger. Imprudently exposing himself to cold, the tetanic symptoms returned in the muscles of the back, but were quickly removed by again having recourse to frictions. The tincture employed was composed of five parts of extract to eleven of alcohol, and was applied all over the body, and more particularly over the rigid parts. M. Bresse adds, that another practitioner has arrested trismus, which he feared would proceed to general tetanus, by the same means.”

From the same work, Part 39, p. 315, a short notice is taken from *Med. Times and Gazette*, April, 1854: “Belladonna may be given in large doses, in tetanus. Give one grain every two hours, and increase this dose to one and a-half grains, using occasionally a suppository with three grains in it. Watch the pupil; if it dilate, gradually desist from the belladonna.

From the same work, Part 10, p. 29: “In tetanus larger doses of belladonna are endured and required for its relief than in cases of neuralgia. The enormous dose of five grains of the extract of belladonna was successfully administered in one case, and in another the dose was gradually increased, until eventually four grains were given, and repeated every two hours. In this case, after a certain quantity of the medicine had been administered for a certain time, the system appeared to acquire a tolerance of it, and, from this point of improvement the symptoms remained stationary until an increased quantity was administered, when speedily a manifest advancement again took place, and this continued for a certain period, until a larger dose was again demanded, in order still further to influence the disorder. This course was very well marked and positive, and this it was which encouraged and induced Dr. H. still further to increase the dose of belladonna, until eventually the tetanus was entirely subdued.”—*Journal of Materia Medica*.

ON THE VALUE OF URINARY ANALYSIS IN THE DIAGNOSIS AND TREATMENT OF HEPATIC DISEASE.

By GEORGE HARLEY, M.D., Professor in University College, London.

The author began by saying that, as the practice of medicine is simplified in direct proportion as our means of "physical diagnosis" increase, he was glad to have the opportunity of calling attention to the fact that a knowledge of the condition of the urine is of as great assistance in the diagnosis of affections of the liver as of those of the kidney. Hitherto, the only physical means we possessed of detecting and distinguishing the various forms of hepatic disease did not extend beyond the acquiring a knowledge of the position and size of the liver by percussion, the absence of bile from the stools by inspection, and the presence of biliary pigment in the urine by the application of nitric acid to that secretion. Every one, however, must have met with cases of obscure hepatic disease where these means of research proved totally inadequate to their requirements. This circumstance has led several practitioners to seek further aids to diagnosis in such cases; and consequently, at various times during the last few years, valuable suggestions have fallen from different members of our profession both here and abroad. For example, Dr. Eiselt, of Prague, has called attention to the fact that in cases of melanotic cancer of the liver, the true nature of the affection may be sometimes discovered during life by the presence of melanine in the patient's urine. (A specimen was shown to the members of the Association.) Urine containing melanine, the author said, although of the normal color when first passed, gradually becomes of a dark hue, even as dark as porter, when left for some hours exposed to the air. This change appears to be the result of a slow oxidating of the pigment. In the second place, Frerichs, in his admirable treatise on Diseases of the Liver, states that two substances, tyrosine and leucine, which were formerly only known to the scientific chemist, are invariably to be found in the urine of patients laboring under acute or yellow atrophy of the liver. Dr. Harley said he had been able to verify this statement in the urine of a young married woman who died from this most fatal form of disease. Dr. Wilks, he stated, had brought the case under the notice of the Pathological Society, and a report of it would be found in the "Transactions." Dr. Harley mentioned an interesting case of chronic atrophy of the liver, the result of obstruction from dis-

case of the pancreas, in the urine of which he found both tyrosine and leucine. He had seen the gentleman several times along with Mr. Prance, and they noticed that as the disease advanced the quantity of the abnormal ingredients increased. After death, crystals of tyrosine were found in the liver. Dr. Harley recommended that in all cases of obscure hepatic disease these substances should be looked for; and said that in the majority of cases they were readily detected in the concentrated urine by means of the microscope. The tyrosine appears as needles and little stars; the leucine as round yellow balls, some of which are occasionally spiculated.

The author next proceeded to direct attention to the method he had recently laid before the profession of distinguishing between jaundice arising from suppression and jaundice the result of obstruction—two forms of disease so ably described by Dr. Budd. As the treatment of jaundice from suppression ought to be very different from that adopted in jaundice from obstruction, it is of essential importance to be able to distinguish the one from the other. After alluding to the great differences of opinion that have hitherto existed regarding the presence of the biliary acids in the renal secretion in cases of hepatic disease, the author pointed out how the discrepancies arose from the fact that sufficient attention had not been paid to the kind of jaundice under which the patient labored. He said he believed that where bile acids occurred in the urine in any quantity, their presence might be regarded as a certain sign of the existence of some obstruction in the course or at the termination of the common bile duct. Dr. Harley then proceeded to demonstrate, by experiment, how easy it is to detect the bile acids in the urine by means of strong sulphuric acid and a small piece of white sugar. The sulphuric acid was so added as not to mix with the urine; the sugar floated at their line of contact, and after some minutes assumed a purple hue. In the urine containing no bile acids the sugar was simply browned.

Dr. Thudichum said, the author had ascribed the doctrine he had propounded to Prof. Frerichs. He, however, only watched the patients clinically; it was another physiologist who made the examinations, and discovered tyrosine and leucine. The disease in question was dogmatically termed atrophy, but he (Dr. Thudichum) as dogmatically objected to that term, for he had seen cases where the liver was certainly enlarged about one-third its ordinary size; and in one case, brought under his notice by Dr. Richardson, it was double in size. In some cases, so far from the liver being atrophied, it was hypertrophied. An ex-

cellent test was to put a draehm of the solution of the nitrate of mercury to the urine; the urine being then boiled, the white precipitate produced would be transformed into a dark purple color, and the solution itself would assume a partly purple color. —*London Lancet.*

PRESERVATION OF ANIMAL FOOD.

To the Editor of the *Lancet*,

SIR:—Knowing the avidity with which you seek information upon subjects having for their object the general good, and more especially if that subject is dependent upon chemical scientific researches, I am induced to go out of my usual course by forwarding this letter on the important subject of the preservation of animal food in its uncooked state.

I was invited a few days since, by Mr. Richard Jones, of Botolph-lane, City, to inspect his specimens of uncooked preserved joints of meat. A simple statement of facts will explain more fully the nature of this application of science to the requirements of man than any description of mine will convey. I was shown several hundred tins containing hams and bacon, hermetically sealed, from which the whole of the air had been extracted, and the vessel filled with a non-decomposing element, to be shipped for consumption to India, China, and other tropical climates. It will, doubtless, be said that nothing is more simple than to preserve that which has been already cured by salting; at all events, the success attending this branch of the business paved the way for more astonishing results, for in consequence of the perfectly-preserved state of this mildly-cured animal substances, it was determined to try the same means upon fresh *uncooked* meat. The various specimens inspected are a proof of the superiority of this method over every other that has been hitherto brought under the notice of the public.

It appears that Mr. Jones has been engaged on his investigation into this subject for several years. He, from the onset, felt satisfied that if means could be adopted by which every pound of meat should have its given quantity of preservative gas, and the vessel containing the meat could be deprived of the whole of its oxygen, the result must be an entire absence of decomposition. Such a theory put into practice is entirely confirmed by results. As a proof, there are a large number of tins containing beef, legs of mutton, fowls, sausages, fish, &c., all of which have been there for months, put to every test of temperature, yet remain

perfectly free from decomposition. It was found by experience that tin, although the most convenient vessel, had its objection, and it was determined to place the material to be acted upon in earthenware pans or jars. The result was most satisfactory; the meat could not be distinguished, either before or after cooking, from that just obtained from the butcher's, although encased for several months previously. Such was the success attending the placing it in earthenware that Mr. Jones determined to expose the meat thus preserved under glass shades for the Exhibition. For this purpose he merely secured a fresh leg of mutton to a porcelain fish strainer, and fastened this to a small board, into which were screwed some tin stands; these were soldered to a tin-plate bottom, which was again soldered to a rim of tin, which had been previously secured to the bottom of the glass shade by means of hot-cement. The air was then withdrawn from the inside of the shade, a non-decomposing gas introduced, and the aperture sealed up. The apparatus arranged to carry out this purpose protects the fragile glass, whatever may be the amount of atmospheric pressure. During this operation the glass becomes dim in consequence of the deposit of vapor from the meat upon the inside of the glass; yet the contents are distinctly visible, neither increasing, diminishing, or changing their natural appearance.

These are now in the eastern annex of the International Exhibition. Several of these glass shades, containing beef, mutton, fowls, pigeons, salmon, soles, &c., are well worthy the inspection of our naval, military, and hospital surgeons. Who knows but that meat now allowed to rot in the Brazils and other distant countries for want of means of preserving it, may be brought to this country, and be a cheap food for our over-crowded population! There is a large field open to inquiry, and we have only now arrived at the beginning of large results. From looking at the specimens of animal food, I am led to think that similar means applied to the preservation of pathological and anatomical specimens would add much to the beauty of our museums.

I am, Sir, yours respectfully,

SAMUEL AINSWORTH, F.L.S., &c.

Villa Mont Blanc, Spring-grove, Sept., 1862.

—*London Lancet.*

THE ASTLEY COOPER PRIZE.—This prize, of 1500 dollars, has been awarded to Dr. Edward Crisp, by the physicians and surgeons of Guy's Hospital, for his essay on the Anatomy, Physiology, and Pathology of the Human Pancreas.

Book Notices.

THE HOSPITAL STEWARD'S MANUAL; FOR THE INSTRUCTION OF HOSPITAL STEWARDS, WARD-MASTERS, AND ATTENDANTS, IN THEIR SEVERAL DUTIES. Prepared in strict accordance with existing regulations and the customs of service in the Armies of the United States of America; and rendered authoritative by order of the Surgeon-General. By JOSEPH JANVIER WOODWARD, M.D., Assistant-Surgeon U.S.A., Member of the Academy of Natural Sciences of Philadelphia, &c. Philadelphia: J. B. LIPPINCOTT & Co. 1862.

This is an excellent little manual of 324 small-sized octavo pages, containing just what its title indicates. It is printed on good paper, in fair type, and should be in the hands of all the Hospital Stewards, Nurses, and many of the Surgeons of the Army.

For sale at the Bookstore of S. C. GRIGGS & Co., 41 Lake Street, Chicago.

ANATOMY OF THE ARTERIES OF THE HUMAN BODY, DESCRIPTIVE AND SURGICAL, WITH THE DESCRIPTIVE ANATOMY OF THE HEART. By JOHN HATCH POWER, M.D., Fellow, and Member of Council, of the Royal College of Surgeons; Professor of Descriptive and Practical Anatomy, in the Royal College of Surgeons; Surgeon to the City of Dublin Hospital, &c. Authorized and Adopted by the Surgeon-General of the United States Army, for use in Field and General Hospitals. Philadelphia: J. B. LIPPINCOTT & Co. 1862.

This is a small-sized octavo volume of 401 pages; printed on good paper, and excellent type. We have not had time to examine in detail the merits of this work. But it is, doubtless, accurate; and from its moderate size, and numerous cuts, it will be found a very convenient work for reference by the army surgeon, who is often deprived of all access to ordinary libraries.

For sale by S. C. GRIGGS & Co., 41 Lake Street, Chicago.

PHYSICIAN'S VISITING LIST, FOR 1863. Published by LINDSAY & BLAKESTON, of Philadelphia.

Its contents are: an Almanac, a table of Signs, Marshall Hall's ready method in Asphyxia, Poisons and their Antidotes, Table for calculating the period of Utero-Gestation, Blank leaves for visiting lists, Memoranda, Addresses of Patients and others, Accounts asked for, Memoranda of Wants, Obstetric engagements, Vaccination engagements, &c.

Editorial.

N. Y. OPHTHALMIC SCHOOL.—Dr. MARK STEPHENSON delivered the Introductory to his *Eleventh Course* of Lectures on Diseases of the Eye, at the New York Ophthalmic Hospital, cor. 4th Av. and 28th Street, on the 24th ult., to a large and attentive audience, composed of physicians and medical pupils from the several medical schools in the city.

He commenced by welcoming the students to the N. Y. Ophthalmic Hospital, and added he was happy to announce to them that the Institution, in whose behalf he appeared, was never in a more prosperous condition than at the present, averaging a thousand patients per annum, and numbering over three hundred graduates since its organization in 1852. 85 of whom were M.D.'s. After describing the requisite qualifications and duties of a surgeon, he cautioned them against attempting to make a display in their operations before a gaping crowd, for the purpose of exciting and dazzling an audience by the rapidity of their manipulations, as is too often apparent in some of our amphitheatres. He then drew an impressive contrast between the mere operator and the scientific and skilful surgeon.

Spoke next of the eye, anatomically and pathologically—of its organization and delicacy of structure, transcending all that is wonderful in design and admirable in execution.

That as the eye or its appendages were composed of all the different tissues which enter into the composition of the human frame, so its diseases were more numerous than that of any other organ in the body; also the effect of treatment, whether operative or otherwise, was more satisfactory than that of any other class of diseases, from the fact that there are so many objective symptoms; contrasted the treatment of former times, when Thompson's eye water was the sovereign remedy, with the enlightened and scientific methods of the present day, proving clearly that no department of medical literature had made greater strides in modern days than ophthalmic medicine and surgery. He endeavored to impress upon the minds of his hearers the importance of attending to this department of the

profession; especially those intending to practice in the country, where adequate counsel is difficult to be obtained. Hence the importance of their availing themselves of the untold advantages to be derived from attending the clinics and lectures of an ophthalmic school; that this branch of the profession may no longer be suffered to fall into the hands of empirics and charlatans, to the disgrace of regular practitioners. The time had now come when the stigma should be wiped from the profession, and no longer rest as a reproach upon surgeons, in the middle of the nineteenth century. Every medical man, claiming to be an accomplished physician and surgeon, should be well acquainted with ophthalmic medicine and surgery; urged them not to despond in view of the vastness of the undertaking; what others had accomplished and overcome they might.

He finally closed by saying: "Gentlemen, think nobly of your profession. Remember that its end is *beneficent*, its studies *ennobling and elevating*, its ministration an exercise of your best faculties. To excel in it is worthy of all your aspirations and energies; but requiring mental and moral discipline, patient and persevering labor. Make of your difficulties a school in which strength of character may be tried. There is no sweeter reminiscence than that of difficulties overcome. Cultivate a love of knowledge, for the benefit it will enable you to confer upon others, then what ever worldly fortune betide, you will win the most valuable of all blessings which the occupation of a life can confer, accomplish the will of your Maker and live to His glory."

ILLINOIS STATE MEDICAL SOCIETY.—Shall we have a meeting of the State Medical Society at the regular time next May? Two regular annual meetings have been postponed, on account of the continuance of civil war, and the large number of members absent with our volunteer army; and we raise the question in relation to a further postponement thus early, to elicit from those interested, a free expression of opinion.

It cannot be denied, that repeated postponements are apt to terminate in the permanent dissolution of all voluntary social

organizations. Hence all who desire a continuance of our State organization should favor the holding of the next meeting at the appropriate time. Jacksonville, the place selected for the next meeting, is an attractive locality. Several interesting and important State institutions are located there, and will be accessible to the members of the Society. We trust the meeting will not only be held, but that it will be largely attended also, by delegates from all parts of the State.

CHICAGO MEDICAL SOCIETY.—The regular meetings of this Society are held on Friday evening of each week, in Larmon's Block, on the corner of Clark and Washington Streets. They are well attended, and the exercises interesting and profitable.

APPOINTMENT.—The Governor has filled a vacancy in the Board of Medical Examiners for this State, by the appointment of DANIEL BRAINARD, M.D., Professor of Surgery in Rush Medical College.

CHICAGO MEDICAL SOCIETY.—Nov. 7, 1862.

Regular monthly Meeting. Dr. WICKERSHAM in the chair. Minutes of last meeting read and approved.

Dr. TUCKER exhibited a large pedunculated tumor, fibro-poly-poid in character, which he had removed from the posterior and left side of the cavity of the neck of the uterus. The tumor had existed 18 years. A few days since, the patient was attacked with severe expulsive pains, when the tumor was suddenly forced from the uterus, and remained suspended from the vulva. Dr. TUCKER was called for the purpose, as the patient stated, of having her womb replaced. An examination revealed the true nature of the tumor, which was cut away, after the pedicle had been ligated.

Dr. TUCKER also related the case of a woman æt. 32, to whom he was called in her third confinement. He found a child delivered and dead; the placenta lying in the vagina and mouth of the uterus. Upon placing one hand on the abdomen, he

could distinctly feel a round, hard body like the uterus partially contracted as after delivery; he could also feel another child lying above the umbilicus across the abdomen. On passing the hand into the vagina, to remove the placenta, two distinct and separate mouths of the uterus were discovered; one large, from which the placenta was removed, and the other smaller and closed. The woman recovered in the usual length of time, the ordinary discharge of lochia occurring. More than two months have elapsed since the first birth took place; the second and remaining child continues to develop, and will probably be delivered in about six weeks.

Dr. HOLMES moved that Dr. TUCKER be requested to visit the patient from time to time, and to report the result at some future time.

Dr. HOLMES reported the case of a cyst, which he had removed from the breast of a young woman, 17 years of age. The only point of particular interest in the case consisted in the peculiar form of the cyst, which was about an inch long, and a third of an inch in diameter, and penetrated deep into the gland.

Dr. HATCH opened the discussion on *Scarlatina anginosa*, followed by Drs. HOLMES, TUCKER, WAITE, DAVIS, PAOLI, and PETERSON.

It was voted that the meetings of the Society be held every Friday evening, through the winter and spring.

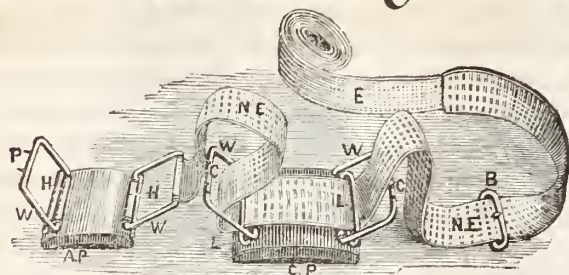
Question for discussion at next meeting—*CAMP DIARRHŒA*.

Adjourned.

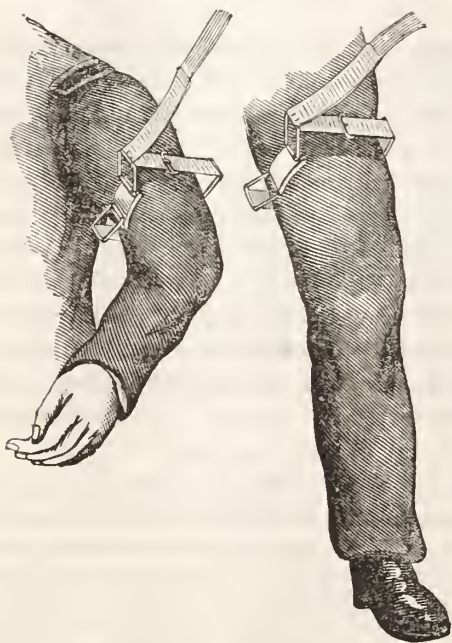
E. L. HOLMES, *Sec'y*.

AFFECTIONS OF THE THROAT IN SCOTLAND. — Sore-throat, ulcerated sore-throat, and diphtheria, have occurred in various localities in Scotland, and in Mid and South Yell. The sore-throat appears to have been accompanied with an affection of the hands, which raises the suspicion that sore-throat and diphtheria in the human subject is but a variety of the epidemic disease in cattle known by the name of murrain or epizootic aptha, characterized by the aphthous and ulcerated mouth and sore hoofs.

LAMBERT'S NEW ELASTIC TOURNIQUET.



This improved Tourniquet is now offered to the profession. It has received the unqualified approval, so far as we can learn, of all Surgeons in this country and in Europe before whom it has been presented.



It is easily applied, allows, when desirable, the "Collateral Circulation," and is very compact and portable.

PRICE, TWO DOLLARS.

Send for a circular of description and commendations.

WADE & FORD, Sole Agents, NEW YORK.

THE
CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

VOL. III.

NOVEMBER, 1862.

NO. 11.

Original Contributions.

ARTICLE XXXV.

LIGATURE OF THE CAROTID ARTERY.

BY H. WARDNER, M.D., Brigade-Surgeon.

U. S. GENERAL HOSPITAL,
MOUND CITY, Ill., *Nov.*, 30th, 1862.

MR. EDITOR:—I send you the following report of a case of wound of the Carotid Artery, its ligation, and result, thinking it may be of some interest to your readers.

On the evening of the 14th of August last, I was stopped by a sentinel near Corinth, Miss., and informed that my brother was dying at the hospital of the 18th Mo. Light Artillery. I hastened to the place, and found my brother, Dr. P. J. Wardner, instead of dying himself, trying to prevent the life of another man from gushing out, and anxiously waiting for assistance.

A private, Adolph Bion, of Capt. Sheldon's Battery, was lying upon a cot in the open air: his face pallid, and his lips and tongue bloodless. A flat compress had been placed over the region of the right carotid, and a roller applied *around* the neck, by a surgeon, unknown to me, at the time the patient received his injury. There was still profuse hæmorrhage: his bed was saturated with blood, and he had lost very much before reaching his camp. His pulse was scarcely perceptible. My

brother, who had been with him a short time, was partially suppressing the blood, while waiting for aid.

I immediately cut away the bandage, and found the wound largely distended by clots of blood that had been retained by the compress. A part of the clot was removed, and pressure made with the finger below the wound, for the time with entire success. The pulse at times was not perceptible. At the end of an hour he had somewhat revived. I then placed a small sized hard roller over the artery, and laid one end of a stick of wood upon it, for pressure; and leaving two men to watch him, I left him, after giving direction to be notified if he should be still alive in the morning.

Accordingly, I was informed that no bleeding had occurred, and that my patient was much better; but in half an hour afterwards, a messenger came at full speed, with the news that the man was bleeding "*like a stuck hog*."

I saw him in all haste; he had made an effort to move his head and had displaced the pressure. Syncope had occurred, and the flow mostly stopped.

The wound was made by the bottom of a brandy bottle in a row.

Being prepared for the operation, I at once enlarged the wound, and emptied it of clots, with which it was largely distended. The gush of blood at this moment was truly frightful. The wound was near the division of the common carotid.

Syncope again occurred; and with the able assistance of Assist. Surgeons E. L. Feehan, 1st Mo. Light Artillery, and A. B. Brown, 22d Ohio Infantry, I seized upon the moment to make the necessary dissection. The artery was raised out of its sheath with the common ligature needle and tied at the crossing of the *omo-hyoid*. He revived to be conscious, but no hope was entertained of his recovery.

The ligature was not applied above the wound for the following reasons:—

1st. It would have required careful dissection in the carotid space, which the immediate safety of the patient positively forbade.

2d. In case of recovery, it was considered probable that adhesive inflammation and occlusion would take place before the circulation would gain sufficient force to produce hæmorrhage from the opposite side.

3d. That the patient might have time to gain sufficient strength to endure the operation, should it become necessary.

He was conveyed upon a stretcher to a tent near Division Head-Quarters, where I had the opportunity of seeing him daily. The first week after the operation there was a low grade of irritative fever, with a strong tendency to typhoid. But upon the free use of tonics, wine, and nourishing diet, he soon began to mend. The ligature came away on the *eleventh* day.

At the end of five weeks, he was able to stand up, and walk a little with help. On the sixth week, it became necessary to move him to the General Hospital at Corinth, on account of the movement upon Iuea. He was taken in a lumber wagon, and jolted across half a mile of corduroy road in a sitting posture. This produced a good deal of arterial excitement. The night following he had an attack of hæmorrhage from the wound, and a recurrence of the same for four succeeding nights. I learned from the attendants, that arterial excitement, a flushed face, and distended bloodvessels preceded the attack.

On returning from the battle of Iuea, I called Dr. J. G. T. Halston, Medical Director, in consultation. It was determined to trust the case to the use of styptics, low diet, and *verat. viride*. A tent was introduced deep into the opening, and saturated with *liquor ferri per sulphatis*. This was allowed to remain till it was discharged by suppuration.

This treatment proved successful. The hæmorrhage did not return. The man gradually recovered, and the wound entirely healed.

On the last of October, I saw him walking about the streets of Corinth, "*all right*," except that he had not recovered his usual strength. He was awaiting his discharge from the service, and longing to be on his way to his native Switzerland.

To me this case is a very interesting one, and the result equally as satisfactory.

Query.—Was it justifiable to omit the ligature above the wound?

Very respectfully, your obedient servant,
H. WARDNER.

ARTICLE XXXVI.

CASES REPORTED FOR THE MEDICAL EXAMINER.

By O. B. ORMSBY, Assistant-Surgeon, 18th Ill.

No. I. B., a private of the 18th Regt. Ill. Vols., aged 24 years, black hair, dark complexion, very robust, was wounded at Fort Donelson by a musket ball, which entered the anterior aspect of the left thigh, and passed directly backwards, fracturing the femur in the middle-third.

Loose fragments were removed, and cold dressings applied during three days, when he was brought in to Dover. Here, Dr. DAVIS, his surgeon, constructed a simple inclined plane, consisting of two straight splints of the length of the injured limb, fastened together at the foot, and having canvas tacked across the under side to act as a bed for its reception. Light bandages were thrown around the limb. Placed in this contrivance; and the patient who had been much exposed to rigorous weather, was immediately put upon generous diet, and stimulants. As there had been considerable comminution of the broken bone, immediate union was not anticipated, but the limb was maintained at rest in a horizontal position without extension, and treated by application of cold. Suppuration was established within a few days, and some pieces of bone were discharged. On the tenth day after the receipt of the injury, he was sent by steamer to St. Louis. where, under the same general plan of treatment, (that is the "let alone plan,") he continued to improve, until sufficient union had taken place to admit of his walking on crutches, when he was sent home. He is now able to walk with a cane.

No. II. W., a private of the 18th Regt. Ill. Vols. Light hair,

light complexion, and blue eyes, American, aged 25 years, robust and healthy, was wounded in the battle of Fort Donelson by a minie ball, which passed obliquely through the left thigh, breaking the bone at the junction of its upper and middle thirds. Examination revealed great comminution, and a number of fragments were removed from the wound.

Simple dressings were applied until the third day, when the limb was placed upon the straight inclined plane without extension, and dressed by the application of a light bandage around both splint and limb. The foot was raised two or three inches, so that the limb just cleared the bed, and in that position left at rest. The strength of the patient was supported, suppuration was kindly established, and on the tenth day he was transferred to St. Louis, where he remained under the same general plan of treatment, until able to travel; when he was sent home. His limb is considerably shortened, but still, more useful than any substitute with which I am acquainted

No. III. C. a private of the 18th Ill. Vols., aged 45 years, robust in appearance, but has suffered much exposure when young, was wounded at the battle of Fort Donelson by a musket ball, which passed obliquely through the left thigh, fracturing it near its middle. So great was the shock, and permanent depression following, that an operation was not deemed advisable. Stimulants, and generous diet, were freely administered; but he soon sunk into a muttering delirium: to relieve which, all efforts proved unavailing. He remained in this condition until the tenth day, when he died, no operation for his relief having been attempted. It was concluded by all who examined him, that an operation would be a gratuitous cruelty.

No. IV. G., a private of the 18th Regt. Ill. Vols., American, aged 19 years, dark complexion, medium height and size, quite active and robust, was wounded in the battle of Fort Donelson by a musket shot, which passed through the right thigh, breaking the femur at the junction of its middle and upper thirds. When brought in, he manifested considerable depression, but rallied under the use of stimulants. The bone was so badly shattered as to induce the belief that recovery without an oper-

ation could not be hoped for; and as it appeared that in consideration of his age and general good health, recovery after operation might be at least possible; amputation was decided upon. The operation, (circular). was quickly and neatly performed by his surgeon, and for a time he seemed to bid fair for recovery. Upon the second day, however, the wound assumed a lived hue, the tongue became dry, the extremities cold, and the pulse rose to 220 in the minute. Brandy, carb. ammonia, and other stimulants, were freely administered, but he became delirious, and upon the fourth day died. In the case (No. III.) preceding this, an operation would in all probability have been followed by a very similar result.

Reflecting on the cases above narrated, and others of the same character. which have come within the scope of my observation, I am led to conclude that many limbs are amputated, which might with as little, and, perhaps, even less risk to the patient's life, be saved. The difference in gravity between an injury, such as is commonly produced by the passage of a ball through the shaft of the femur, and that which is produced by the knife of the surgeon in amputation of the thigh, appears to me to be less considerable than many believe.

In either case, the wound may be considered, and should be treated as a very dangerous one. In the treatment of gunshot injuries of the thigh upon the conservative principle, I apprehend that in the first place care should be exercised to have the external wound sufficiently large for the free escape of pus, and foreign bodies, which may be lodged there. All foreign substances should of course be removed, but, upon this point military surgeons caution us (and I think very justly to), against the forcible abduction of fragments, which, although they may be entirely separated from the bone, are still adherent to the periostium, as laceration is liable to ensue to the extent of serious interference with the reproduction of bone. No doubt exists in my mind that many of these splinters (particularly in cases which result favorably), become reunited firmly again to the bone. In my opinion, the application of extension to these cases is bad practice. The wound is of so grave a character,

that, under the most favorable circumstances, if the patient recover he will do well, and every source of irritation, however slight, is so much in the scale against him. In these injuries also, very frequently a considerable portion of the whole circumference of the bone is entirely broken up and removed; thus when the limb is fully extended, leaving a vacancy of perhaps an inch in the length of the bone quite vacant. If the extension is kept up, this entire space must be filled with callus, beside the envelopment of the ends of the bone. The organization of callus at such a distance from the living structure is not very readily accomplished: more time being required for its completion.

It is evident, that in order to fix the bone, and render it immovable, would, under these circumstances, require a higher degree of organization; and more complete hardening of the callus than is requisite, where the fractured surfaces are in contact, thereby consuming still more time.

By the admission of air into the cavity thus resulting, an extensive suppuration may be set up in the medullary canal, when a short time will terminate the life of your patient. Whereas, had no extension been employed, the broken ends would have been approximated by the action of the muscles; the small cavities remaining, would have been filled and protected, first, by coagula, then by lymph, or other organized matter; callus would shortly have enveloped the ends of the bone, and possibly, at last, recovery might be the result. I will only remark further, that the fractures produced by ball, very generally so nearly transverse, that little or no displacement results from muscular action; and where displacement does occur from this cause, I would employ only just so much extension as would retain the bone properly in position.

For the purpose of treating fractures, where extension is not desirable, the most simple, and for the field, the best apparatus I think to be the one used by Dr. DAVIS, as described above. One of its greatest advantages is, that materials for its construction are always at hand. A couple of pieces of board, a few nails, tacks, and a strip of canvas, or piece of tent flie, is

required; or failing these, the drawer leg of your patient may be cut off, a small stick or withe bended and introduced through it, with the bow at the foot: the limb raised in it, and then swung by a cord, or raised by some other means, and left at rest. I have seen a contrivance of this kind, answer an admirable purpose, and in the absence of better appliances it is certainly worthy of trial.

ARTICLE XXXVII.

THE MEDICINAL USES OF ERGOT, OTHER THAN
AS A PARTURIFACIENT.

BY M. O. HEYDOCK, M.D.

Read before the Chicago Medical Society.

The cure of a disease is brought about by the removal of its proximate cause; and this is effected either by the *vis medicatrix naturæ*, or conjointly with the assistance of art. The careful observer learns, as far as is possible, in what way nature accomplishes the result unaided, and discovers that under certain circumstances, it is through a greater activity of the skin, the intestinal canal, or the renal organs. Having noted that nature spontaneously removes many derangements of the animal economy, his next step is to learn what drugs will accomplish like results when nature fails. The accumulated experience of medical men for ages has furnished us with many medicines, mineral and vegetable, which we may rely upon as positive agents. Croton oil is a drastic cathartic, given internally, and an irritant applied externally; the Spanish fly blisters the surface; and sulphate of zinc or ipecacuanha causes emesis.

The physician, should he so elect, may stop at this point, satisfied with the accomplished fact, not caring how the results are brought about, or in other words, the *modus operandi* of this drug, he goes on, skilful perhaps in diagnosis, and so far as the evacuant treatment is of benefit, using his remedies with a fair degree of success. But in that class of cases for instance, where

the question arises whether the extreme vessels are dilated or contracted, and whether a drug has the power to cause or remove either of these morbid conditions, he finds himself at fault.

I use this illustration because the subject I propose discussing in this evening's paper has, with several others, been ably presented to the profession by BROWN SEQUARD, in a series of articles upon some forms of paralysis. I know that there are those who think that ergot was designed by Providence for parturient women alone, and consequently that we should be satisfied that in so doing it has accomplished its mission; it is an absurdity, say they, to bring it forward as a remedy in paralysis; we have in strychnine the only agent we want, and if this will not cure our patient, nothing will.

I cannot subscribe to these opinions, believing, as I do, that there is no department of our professional study which to-day repays labor and research like the unfolding of the hidden treasures of our *materia medica*.

Each year is fruitful of some discovery, which explains and makes clear to the student the reason *why* certain results are brought about with a good degree of certainty by certain remedies; some great practical truth is developed which—engrafted upon sound views of physiology and pathology—enables him to apply a remedy in cases where accident and good fortune might never have inclined him.

I shall relate to you opinions gleaned from various authors and writers, in reference to the use of ergot, aside from its action as a parturifacient, many of which go to support SEQUARD'S theory, which you are aware is that many cases of paralysis are attended with, or caused by, hyperæmia, or congestion of the vessels of the spinal cord, while in others the opposite condition exists; and that the remedy indicated in one class of cases fails in or aggravates the other, and his acknowledged success in the treatment of the grave lesions entitles his opinion to our confidence and respect. He claims that ergot, belladonna, and mercury cause contraction of the extreme vessels of the cord; while strychnine and brucia cause congestion and fulness of those vessels; and he uses them as he thinks this or that condition exists.

I shall not seek to support his theory, but by citing extracts in reference to the different uses to which the ergot has been put, leave each to decide whether he can reconcile the action with the hypothesis.

He believes that belladonna acts with greater energy upon those of the brain, while ergot is preferable where we wish to reach those of the spinal cord. In large doses, this drug is said to produce a sense of pain and weight in the head, giddiness, dilatation of the pupils, delirium, and stupor; and, according to WOOD & BACHE, a reduction in the frequency of the pulse.

Its long continued use has, we know, caused terrible and devastating epidemics in France, and different parts of the continent of Europe; death occurring, in many instances, which could be traced directly to the use of bread contaminated with the presence of this degenerate grain.

Prominent among the symptoms, to which its use gave rise, were dry gangrene, great disturbance of the nervous system, attended with convulsion, typhus fever, and kindred disorders.

WOOD asks if it may not have the power of producing contraction of the capillaries in general, or of interfering in some other way with the circulation of the blood in these vessels, as by the exertion of a direct sedative or paralyzing influence on them, as in this way we may explain the dry gangrene, resulting from its use as well as its influence in restraining hemorrhage.

Dr. C. L. MITCHELL, of Kings County, New York, read a paper upon its use in spermatorrhœa, congestion, and irritation of the genital organs of the male.

He says that it was first used in diarrhœa in 1840, and about one year afterwards, in various hemorrhages. He now used it in dysmenorrhœa, which he supposed to arise from congestion of the uterus and its appendages, and with success.

Its use was attended with gratifying results in cases of spermatorrhœa.

The second case treated of this nature, was that of a physician, who was a confirmed opium eater, and a great sufferer

from seminal emissions, the combined influence of which had reduced him to a condition not much removed from dementia; great benefit was derived from its exhibition within seven days.

In a case of great irritation about the neck of the bladder, ergot and camphor were given; and though it was of several days' duration, and a severe one, relief followed the first dose.

A writer in the *Medical Gazette*, of 1848, says that he finds that ergot, taken as a snuff, will remove the excessive dilatation of the pupil, arising from belladonna, and thinks that it may be successful in dilated pupil from other causes.

Dr. ROUSSELL, of St. Bartholemew's Hospital, speaks highly of its use in pulmonary hemorrhage, after various remedies had been tried in vain, the first dose controlling it.

Dr. PAGAN, in the *Medical Gazette*, of 1842, records three cases of paraplegia treated by it successfully; one of which was the result of saturnine poisoning.

Mr. WRIGHT, in an article upon the oil of ergot, speaks of its use in capillary hemorrhage, bleeding from leech bites, the extraction of a tooth, and diarrhœa.

Numberless cases are reported in *Braithwaite*, and other journals, of its use in retention of urine. One case where it had been complete, it yielded after a few days' use of ergot, in doses ranging from 10 grains to half a drachm. One girl, who had long suffered from this disorder, but who was under treatment for amenorrhœa, was entirely relieved by six doses.

Dr. MITCHELL, to whose paper I previously referred, reports a case where the catheter had been required for a space of three months, as being entirely cured by this treatment. Its value in these cases cannot be denied.

Dr. BARKER, of New York, says that he seldom has occasion to use the catheter in the retention following labor; and since I noticed his suggestion, I resort to its early use, and in many cases have derived much benefit from its administration.

Dr. ALLIER, in the *London Lancet*, of 1848, laid down the following conclusions:—

I. Ergot restores to the bladder its contractility, impaired by immoderate distension of its coats, and has acted in this manner when all other means have failed.

II. Paralysis of the bladder, arising from cerebral hemorrhage, has promptly given way under its use; but it has no effect in paralysis of the limbs, resulting from apoplexy.

III. It shortens the duration of vesical paralysis, failing once in fourteen times, which is about the proportion of approved remedies.

IV. Its effects are rather evanescent, and it should, therefore, be frequently repeated; the dose may be 60 or 70 grs. a-day, and it should be gradually reduced after apparent recovery.

V. He sums up by saying that we have in the systematic use of ergot a remedy capable of shortening vesical paralysis, which after a longer or shorter time, *may* yield to other means; but which is often looked upon as incurable, and often producing that sad and disgusting infirmity—incontinence of urine.

I have now presented such facts and observations as I have found recorded; and I think that very many of them support the theory advanced. If, in the crucible of experience, this position is sustained, we have a remedy of great value, and one of which the profession will not be slow to avail itself. If, on the other hand, it prove like many which have proceeded it—beautiful in theory but inert and powerless for good in practice—we shall, at any rate, have the consolation of feeling that we have not labored in vain, for a negative result in one direction is not necessarily barren of influence upon events and discoveries which follow after.

ARTICLE XXXVIII,

ON THE TREATMENT OF CANCEROUS DISEASES.

By E. MARGUERAT, M.D., of Chicago.

Read before the Chicago Medical Society, 1862.

I am aware, gentlemen, that this is rather an unpromising subject for an essay now a days. The incurability of cancers has been so often proclaimed, *ex cathedra*, that late writers have become very dogmatic on the subject. Still, for my part, I like

the hopeful spirit of old Dr. MOTT, who, so often used to say in his lectures, that he had no doubt but some day a specific should be found for the cure of consumption and cancers. It has been frequently reproached to some of our late clinical writers, especially in France, that they display all their talent and energy for the improvement of pathology and diagnosis, but scarcely give a passing attention to the treatment. This is, perhaps, too much the case to-day with the profession at large, on the subject of cancers. As a general rule, when a cancerous patient applies to a medical man, the knife is the only hope offered to him, and if he is too timid, or too incredulous to submit to an operation, his only resource is in the advertising charlatan, and it is my candid opinion that he is not always successful there. The *ipse dixit*, ought to have less power in the practice of medicine than anywhere else; prejudice has often barred the way to progress. Because we have no medicine that has proved generally successful in the treatment of cancers, authors have denied in toto that any case of cancer had ever been cured by medicine.

It appears, unfortunately, that we have no rule by which we can diagnose with certainty a cancerous growth in its first stage at least. Even the microscope fails to give us a certain criticism. The so called cancer-cell on which so much importance has been placed, has lost a part of its claims. VIRCHOW, in his late work on cellular-pathology, comes to the conclusion that cancerous formations have no tissue-element that belong to them exclusive. Hence the great difficulty that has always been experienced in defending their claims, by those who believed to have cured cases of cancer. It has always been an easy matter to accuse them of error in diagnosis. The case was cured, ergo, it was not a case of cancer. There is, however, one class of so called semi-malignant growths, for which a little more charity has been shown. A great deal has been written of late years on epithelial cancers, epitheliomas, or canceroids; a separate class has been made of them, not however on a very sure foundation. Many prove to be as truly malignant in their nature as carcinoma; and to quote VIRCHOW again: "It is impossible to find a well defined limit between the different

formations of this group; they might all be included under the collective name of cancers, but for the clinical experience which shows that cancers generalize themselves usually, while canceroides do so seldom. The malignancy of new formations, depends much less on their tissue elements, than on the following two considerations: their more or less degree of organization, and their state of fluidity.

However this may be, it must be admitted that cancers are as much a constitutional as a local affection; hence, the constitutional treatment ought to have, at least, as much importance as the operative treatment. PAGET, in one of his papers, gives the statistics of a large number of cases, from which he concludes that in cases of scirrhus of the breast, patients die on an average thirteen months sooner, on whom an operation has been performed. If such should be the case, it is well worth the while to see what has been done; and what can be done, by a medical treatment. Dr. COOKE, in his essay, read before the London Medical Society in 1858, says, that the constitutional treatment of cancers is the only one in which he has any confidence. He places his chief reliance on a proper regulation of the diet, and habits of the patient, together with a tonic medication.

He claims to have by a persevering attention to this system, completely eradicated some well marked cases of cancerous diathesis.

Dr. TEESON, surgeon of the Middlesex Hospital, reports a case of mammary scirrhus entirely cured by the use of chlorid of zinc, both internally and externally; and another case much benefited by the same treatment.

Dr. MONTGOMERY, in his essay on cancer of the womb, terminates by saying that he knows such cases to be curable without operation, if taken early. Antiphlogistic treatment at the beginning, followed by iodine, iron, arsenic, with local application of nitrate of silver, when necessary, form his treatment.

Dr. WALSHIE relates a case of incipient tumor of the breast, that completely and permanently disappeared under compression, and the internal administration of iodide of arsenic.

Dr. FANCHOU, in 1849, presented to the Medical Society of Paris, two cases that were admitted by them as cancerous. After a three month's treatment, the first case, a cancer of the chin was returned cured; the second, a mammary scirrhus in its second stage, was very materially benefited. His remedies were iodine and arsenic, internally and externally, with the necessary attention to diet, etc.

LANDLOF, a surgeon of the metropolitan army, submitted in 1855, to a commission of physicians both in France and Germany, the result of his treatment of several cases, acknowledged by all, as cases of a malignant nature. Several of them were in succession returned, either cured, or materially improved, by the persistent use of chlorid of bromine. Among the cases are two cancers of the breast.

It would be tedious to repeat at length all the authorities on the subject. STORK, HAVELAND, STANLEY, SPENCER, WELLS, SIMON, DEVAY, MANCE, all men of reputation and integrity, report cases successfully treated by them. One case related by Dr. A. T. THOMPSON, has a special interest; it is that of a woman, 46 years of age, with a double mammary tumor, offering all the characters of scirrhus. After a persevering use of iodide of arsenic and conium, for more than eleven months, the tumor had entirely disappeared, and the woman was in good health.

Many other authorities might be quoted, but these are sufficient for my purpose. They satisfy me, that a good deal can be done by medication in the cancerous diathesis; and I cannot subscribe to the sweeping assertion of ERICHSEN and others, "that all constitutional curative treatment of cancers is altogether useless. To be sure, in the present state of our knowledge, we have no remedies possessed of a specific virtue in the treatment of cancers; but we have in the bichloride of mercury, iodine, chlorine, bromine, arsenic, and their combinations, a valuable store that has power and will still prove useful. And, I think, if we had had more men of the perseverance of Dr. THOMPSON, we should be able to produce more cases of cures.

It has been my privilege to spend some time with Dr. MAYER, formerly a surgeon in the Hospital of Lausanne. During his

short stay in a country district in the State of N. Y., he was called upon to treat several cases of cancerous diseases, and had at that time a large reputation for skill and success. Although an advocate of the operation in all cases that permitted it, he relied in many cases on a combination of external applications and constitutional treatment. He employed in turns iodine, arsenic, the bichloride, &c., in varying combinations with tonics; caustic ointments of a slow action, nitrate of silver, potassa, &c. I have no notes of any of his cases, but I can testify to many cases of malignant ulcers entirely cured, and several cases of cancer of the breast improved by him.

My own experience has furnished me with a few cases that have been of great interest to me. I shall only briefly report a few. The first was a case of cancer of the lower lip, that I followed under Dr. MAYAR's treatment. The cancer had commenced as a wart, on the side of the lower lip, and had gradually gone to ulceration. The patient was a man about 50 years of age. He had been treated by several physicians; had apparently taken a good deal of arsenic, without benefit, when he applied to Dr. MAYAR. As he was not willing to submit to an operation, he was put on the use of iodine internally, with occasional cauterization of the ulcer, anodyne plasters, and bichloride of mercury. Dr. MAYAR, at that time, returned to Europe, and left the patient in a rapidly improving condition. At the end of three months' treatment, the ulcer was cicatrized and the patient well.

The second case is that of Mr. C. Jackson, Lansing, N.Y. Several years before I saw him, he had been troubled with a chronic form of ulceration of the cheeks, nose, and eyelids. He had been under the care of several cancer curers. When he applied to me, two years ago, he had half a dozen ulcers, of the size of a ten cent piece, on his cheek; a hard indolent swelling of the upper lip, and the right ala nasi was perforated by an ulcer, through which I could pass the end of my finger. The skin around the ulcers was red and hard. He was a man 70 years old, of temperate habits; had never had any syphilitic disease. I first subdued the inflammation by cooling emolient

applications and rest, and after a while put him on the use of Donovan's solution. I then applied chloride of zinc to the ulcer in the nose, and nitrate of silver repeatedly on the ulcers of the cheeks. However, I obtained no benefit from external application for the first six weeks or two months; the ulcers kept growing, and that in the nose had nearly doubled in size. I kept increasing the dose of Donovan's solution until he complained of weakness and swelling in his limbs. I then gradually diminished the dose, and commenced again the application of chloride of zinc. I was very gratified to find after one application the ulcer in the nose take a rapid turn, assume a healthy gradulating appearance, and finally, entirely close, after three or four weeks; leaving only a puckered cicatrix. I kept him on infusion of sarsaparilla, *ad libitum*. The skin all over the face assumed a smooth and healthy aspect; the swelling of the lips disappeared; no return of the disease had occurred when I left a year ago.

I do not claim this case to be positively of a cancerous nature; but call it lupus, or canceroides, or anything else. It certainly was a case of a very obstinate character; and on it I have two remarks to make here: 1st, that no benefit in the treatment followed the use of caustics, until the constitutional treatment had been carried very far; and, 2d, that during the course of the treatment I happened to prescribe a few pills containing half a grain of calomel each. When he returned to me after having used them, the ulceration had spread at a rate, at least, twice as rapid as it had at any other time before. I could discover no other cause for it than the calomel; this again proves the importance of the constitutional treatment.

Five years ago, in Ithaca, N. Y., I saw in connection with Dr. CORYELL, a distinguished practitioner in the place, two cases of mammary cancers in their second stage, and very similar in their symptoms and history. Both presented a large ulcerated surface; the glands in the axilla and neck were in both enlarged and indurated. The cancerous cachexia was not yet very apparent. They were evidently not cases for operation. We undertook to do what we could, in the way of palliative

treatment. Bichloride of mercury and arsenic were prescribed, in combination with anodynes; careful partial cauterization of the ulcers, followed by soothing applications, and tincture of iodine on the enlarged glands, were alternately used. After a few weeks' treatment, one of the patients tired of the process, yielded to the persuasions of some friends, and went to undergo an operation in New York City. After a few weeks' absence, she came back apparently perfectly cured, and greatly elated. Two weeks afterwards she died from some pulmonary affection, I believe. In the other patient, a perseverance in the treatment brought gradually a diminution in the size of the gland; the ulceration remained nearly stationary; her general health kept unimpaired, and she was still alive when last I heard of her, a year afterwards.

I have no doubt, gentlemen, that most of you might draw from your experience cases similar to these, and, perhaps, of a still greater interest. Whatever conclusion you may have come to, I think I am justified in saying that all curative constitutional treatment is not altogether useless; and, whenever I meet with a case favorable for it, I shall try what a persevering constitutional treatment of cancer can do.

According to Dr. Faneau's statistics, the number of cancers is on the increase. And, still in 1840, the number of deaths by cancer, in the city of Paris alone was nearly 800. It then comes within the province of every physician, to give a serious attention to the treatment of an affection that must often come under his care in the course of a long practice. It is only the general experience of the profession that can satisfactorily solve the question of the curability of cancers. It is an interesting fact connected with the history of cancers, that the first case on record, 900 years B.C., is reported by HERODOTUS, to have been cured without operation.

Army Correspondence.

ARMY IN THE FIELD, SOUTH OF TALLAHATCHIE RIVER,
MISSISSIPPI, *Dec. 5, 1862.*

MESSRS. EDITORS:—Although there are no great combats to record at present, nevertheless, it may be of some interest to your readers to hear from this part of the army.

During the spring and summer, the most common diseases among us were diarrhœa and dysenteries, often running to the chronic form. As summer advanced, bowel diseases became a little less frequent, and periodical fevers took their place. In September, intermittents and remittents were considerably prevalent. A number of fatal cases of congestive fever occurred in the infantry, outside of Memphis, but scarcely any in the garrison proper. A few cases of remittent fever ran rapidly to a fatal termination; but scarcely any true typhoid fever proper, as seen in Chicago, occurred. September proved the sickliest month in the year, yet the number under treatment was only nine per cent of the whole force; which is one per cent less than Lord Wellington states as the minimum amount of sickness obtainable under the best circumstances. It was observable also, that the artillery suffered much less than the infantry; of about 175 cases of acute dysentery, occurring in the artillery during seven months, not one proved fatal, and sickness of other kinds was milder, and less frequent by far among them, than among infantry. I attribute the difference to the fact, that the infantry soldier on the march, is put to excessive exertion, both in carrying his knapsack, arms, and ammunition, and also by the very act of walking under a boiling southern sun. This aggravates all bowel complaints. When not on the march, he relapses into a state of too great inaction, having often for weeks very little vigorous exercise to perform; thus, alternately between the extremes of exhausting labor and enervating quietness, he suffers by the sudden changes to which he is exposed. The artillery soldier, on the contrary, has a pretty uniform life of moderate steady labor: the constant care of his horses, harness, side arms, etc. etc., secures steady exercise in camp, and when put upon

he march, he rides either on horse or eaisson, so that the transfer to the field makes very little increase of his hardships, or change in his mode of life. This state of things, very much favors a uniform good health.

In the cavalry I find that surgical accidents are very common, and especially for hernia. The act of riding brings the abdominal muscles into constant use in preserving the position of the body in the saddle, hence, the abdominal viscera being constantly pressed upon, at length bulge through the inguinal rings. Some also are kicked by horses; bruised on the pommel of the saddle, or fracture limbs by being thrown.

Our advance thus far into Mississippi has resulted in very little fighting. The front skirmished with slight loss; and there is little of surgical interest to relate. At present the diseases are few and sparse: consisting mainly of acute bronchitis, mild pneumonias, and slight rheumaties. We live on the country, finding plenty of poultry, cattle, sweet potatoes, corn, and forage, so that the diet both of men and horses is superb; and, of course, scurvy is out of the question, and other diseases mild. The climate is mild, generally requiring no overcoats in the day time, but giving us frequently a sharp frost at night. Our sick were left behind when we left Memphis, so that surgeon's duties are now light. The flora of this region presents some striking changes as we advance. The mistletoe is abundant, of course, and numerous other evergreens present themselves as we advance. Among them is the cane, which does not here get its full growth, but appears larger, as we advance. There are several woody vines which appear to retain their foliage all winter, and a number of trees of the latter one or two are, I believe, species of the holly; the trunk and leaf closely resemble the beech, but the foliage is evergreen, and present at the present time a vividness of green, not one whit less than that of the fullest glory of midsummer.

At present, this part of the army has halted south of the Tallahatchie, while the other is pursuing the flying enemy beyond Grenada. Apparently, we must do some weary marching before we can bring them again to battle. Yours truly.

E. ANDREWS.

Selections.

EXPERIMENTAL RESEARCHES INTO A NEW EXCRETORY FUNCTION OF THE LIVER, &c.

By AUSTIN FLINT, JR., M.D., Professor of Physiology and Microscopy
in the Bellevue Medical College, New York; &c.

(Continued from page 630.)

Functions of the cholesterine.—By experiments which I have performed upon the lower animals, and by certain facts which have been developed by observations on the human blood in health and disease, I conceive that I have been enabled to solve the problem of the function of cholesterine.

Cholesterine is an excrementitious product, formed in great part by the destructive assimilation of the brain and nerves, separated from the blood by the liver, poured into the upper part of the small intestine with the bile, transformed in its passage down the alimentary canal into stercorine (the seroline of Boudet, a substance differing very little from cholesterine), and, as stercorine, discharged by the rectum.

The quotation with which I prefaced this paper expresses the actual state of the science with regard to cholesterine. Still, though our actual knowledge of its function has been so slight, a few writers on chemical physiology and on physiology, taking the limited data on this subject, make reference to it as an effete substance. With regard to its relation to the brain, some think that it is formed in the brain and taken up by the blood, while others think that it is formed in the blood and deposited in the brain. All the views with regard to its effete properties are, of course, based on the supposition that it is discharged in the feces. Effete matters are discharged from the body, and this would find its exit by the anus, since it has never been detected in the urine. These conjectures have attracted little attention in the scientific world; and these views being based on the supposition that this substance is formed in the fecal matters, fall to the ground from the fact that no one as yet detected it in the feces. The fact that cholesterine is so generally considered an ingredient of the feces may be thus explained. It is poured into the alimentary canal with the bile; no one has shown what becomes of it, the chemistry of the feces being little understood, and therefore it has been assumed that it is found in the feces. That the facts which we have with regard to cholesterine render

its effete properties possible, and, perhaps, probable, is certainly true; but these facts are merely sufficient to enable the scientific investigator to address an intelligent inquiry to nature on this subject; they do not resolve the question. In the experiments which form the basis of this article, the inquiry was made and the answer obtained; some others have, without much reflection, apparently, made simple statements which approximate in some degree to the facts. The only way these assertions could be sustained is by the labor which I have expended in eliciting from nature a reply to my interrogatories.

The works which I have had an opportunity of consulting, where any decided opinion relative to the function of cholesterine has been expressed, are those of Carpenter, Lehmann, Mailhe, and Dalton.*

Carpenter, in the fifth American edition of his *Human Physiology*, 1853, has the following with regard to the function of cholesterine.

"It is also stated to be a constituent of the nervous tissue, having been extracted from the brain by Couerbe, and other experimenters; but it may be doubted whether this is not rather a product of the disintegration of nerve-substance, which is destined to be taken back into the blood for elimination by the excretory apparatus, like the kreatine which may be extracted from the juice of flesh, or the urea which is obtainable from the vitreous humor of the eye, both being undoubtedly excrementitious matters. For cholesterine is a characteristic component of the biliary excretion, and is closely related to its peculiar acids; so that it can scarcely be looked upon in any other light than as an excrementitious product, the highest function of which is to assist in the support of the calorifying process. It is frequently separated from the blood as a morbid product; thus it is often present in considerable quantity in dropsical fluids, and particularly in the contents of cysts; and it may be deposited in the solid form in degenerated structures, tubercular concretions, &c."†

In Lehmann, we find the following on this subject:—

"Judging from the mode of its occurrence, we must regard it as a product of decomposition; but from what substances and by what process it is formed, it is impossible even to guess. Notwithstanding the similarity which many of its physical properties present to those of the fats, we can hardly suppose that it takes its origin from them, since the fats, for the most part, become oxidized in the animal body, whereas in order to form cholesterine, they must undergo a process of deoxidation."‡

I translate the following from the excellent work of Mialhe, on *Chemistry applied to Physiology and Therapeutics*, Paris, 1856, the paragraph entitled "Source of Cholesterine in the Animal Economy."

* These authors are quoted in the order in which their publications appeared.

† Carpenter's *Principles of Human Physiology*, page 74. Philadelphia, 1853.

‡ *Physiological Chemistry*, by Professor C. G. Lehmann, vol. i. 248. Philadelphia, 1855.

"We have just examined in what manner the fatty bodies penetrate into the blood. Some eminent *savans* have held that the fatty matters from the exterior are the only ones which exist in the economy, and that it is incapable of producing these in itself. Now it is an opposite opinion which tends to predominate, and the majority of physiologists think that certain fatty bodies take origin in the very substance of our organism. This last mode of origin seems at least incontestible for the cholesterine, which has not yet been found in the vegetable kingdom.

"But what are the chemico-physiological reactions which preside over the development of this particular fatty substance?

"There are for us two modes for comprehending the formation of the cholesterine at the expense of the elements of the blood. Cholesterine may come from the fatty matters; it would be, in this case, like the final result or last stage of chemical modifications which the fatty matters undergo in the animal economy,

"This manner of viewing it is slightly probable; for, in order that it should be true, it would be necessary that the fatty bodies, in oxidizing, should give rise to a compound richer than they in carbon. We know, indeed, that cholesterine is, of all fatty bodies, the one which contains the most carbon.

"We think that we should reject that opinion and stop at the following:

"The production of cholesterine may be attributed to a transformation of the albuminoid materials, a transformation analogous to that which has been pointed out by M. Blondeau de Carrolles in cheese, and which that chemist has designated under the name of adipose fermentation. The large proportion of carbon which the cholesterine contains, and which approximates it to albuminous matters, would come to the support of that point of view. The retardation of the circulation, and the deficiency of oxidation which is the consequence of it, explains also why the cholesterine is in much greater proportion in the closed cavities than in the blood itself.

"Whichever it may be of these two opinions, it is incontestible for us that, if the cholesterine be not burned with the other matters proper to respiratory alimentation, it is solely on account of its chemical inertia; cholesterine, indeed, is to fatty matters what mannite is to saccharine substances—what urea is to albuminoid matters; that is to say, that it constitutes a kind of *caput mortuum*, of which the organism has only to free itself. It is certain, also, for us, that if the cholesterine is not found in all the excrementitious liquids, where most of the other products existing in the blood are found, it is solely on account of its insolubility.

"The preceding remarks explain perfectly, to our eyes at least, why the presence of cholesterine has never been established in the urine of man, either in the form of crystals, or 'calculi,' while this substance is found in the bile, where it very often forms calculi of considerable size. Cholesterine, indeed, is insoluble in acid liquids, such as the urine; while it is soluble in soapy liquids, such as the bile. Such is solely the reason why the cholesterine is excreted by the biliary passages."*

Finally in Dalton's *Treatise on Human Physiology*, we find the following paragraph in which the subject of cholesterine is considered:—

"CHOLESTERINE ($C_{25}H_{42}O$).—This is a crystallizable substance which resembles the fats in many respects, since it is destitute of nitrogen, readily inflammable, soluble in alcohol and ether, and entirely insoluble in water. It is not saponifiable, however, by contact with the alkalies, and is distinguished

* *Chimie appliquee a la Physiologie et a la Therapeutique*. Par M. le Docteur Mialhe. Page 191. Paris, 1856.

on this account from the ordinary fatty substances. It occurs, in a crystalline form, mixed with coloring matter, as an abundant ingredient in most biliary calculi, and is found also in different regions of the body, forming a part of various morbid deposits. We have met with it in the fluid of hydrocele, and in the interior of many encysted tumors. The crystals of cholesterine have the form of very thin, colorless transparent, rhomboidal plates, portions of which are often cut out by lines of cleavage parallel to the sides of the crystal. They frequently occur deposited in layers, in which the outlines of the subjacent crystals show very distinctly through the substance of those which are placed above. Cholesterine is not formed in the liver, but originates in the substance of the brain and nervous tissue, from which it may be extracted in large quantity by the action of alcohol. From these tissues it is absorbed by the blood, then conveyed to the liver, and discharged with the bile."*

The above extracts embrace all that I have been able to find bearing on the question of the function of cholesterine. The extracts from Mialhe and Dalton contain all that is said by them on this subject. Those from Carpenter and Lehmann contain only what bears on the function of this substance, the chemical details being omitted. Of the authors cited, Mialhe is the most extended on the subject, and is almost the only one who adduces any arguments to support his views; but his opinions are biased by the purely chemical view which he takes of the subject, and are involved with the ideas with reference to plastic and caloric food, now rejected by many eminent physiologists, and which, I conceive, will be so little supported by future advances in science, that they will soon be universally discarded, in the exclusive sense in which they are received by him. Putting these hypotheses aside, we examine the actual state of our science, with regard to cholesterine, and we find that the function, up to this time, has not been established. We will now proceed to the facts which tend to support the statement I have made on this point.

Cholesterine exists in the blood, from which it may be extracted in a state of purity, and estimated by the process which I have already indicated. Beequerel and Rodier have made analyses of the healthy human blood for this substance with the following results:—

Venous blood of the male.	.	.	.	.	0.09	pts.	per 1.000
" " " female,	.	.	.	.	0.09	"	"

I have made a quantitative analysis of three specimens of healthy human blood with the following results:—

* A Treatise on Human Physiology, designed for the use of students and Practitioners of Medicine. By John C. Dalton, Jr., M.D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York, &c. Page 189. Philadelphia, 1861.

				Quantity of Blood. grains.	Cholesterine. grains.	Proportion per 1,000 pts.
Venous blood from the arm; male	æt.	35		312.083	0.139	0.445
Do. do. do. (colored)	æt.	22		187.843	0.123	0.658
Do. do. do.	æt.	24		102.680	0.077	0.751

These three analyses were all carried on at the same time, and each specimen subjected to precisely the same process. The results show a wide range within the limits of health. The difference was not due to any variation relating to the digestive process, as the specimens were all drawn at the same time, and were taken from prisoners on Blackwell's Island, who were subjected to the same diet, and ate at the same time. It will be seen by this table that I have obtained from five to eight times as much as is indicated by Beequerel and Rodier. I can only explain this by the fact that I operated on the whole blood, while they only analyzed the serum. Boudet states that it is necessary to make three to four copious bleedings, and mix the serum in order to obtain a sufficient quantity for a satisfactory analysis. I have operated on about fifty grains of blood with success, and have no doubt but that I would be able to extract the cholesterine in a crystalline form, and estimate its quantity in fifteen and twenty grains. The purity of the extract can easily be demonstrated by a microscopic examination. I conclude, then, that a much larger quantity of cholesterine exists normally in the blood than has been supposed, and that its variations, in different persons, within the limits of health, are considerable.

The next question which naturally arises is the origin of the cholesterine. When we examine the situations in which it is found, we find that it exists in largest quantity in the substance of the brain and nerves. It is also found in the substance of the liver, probably in the bile which is contained in this organ, and the crystalline lens, but with these exceptions it is found only in the nervous system and blood. Two views present themselves with regard to its origin. Cholesterine is deposited in the nervous matter from the blood, or is formed in the brain and taken up by the blood. This is a question, however, which can be settled experimentally, by analyzing the blood for cholesterine as it goes to the brain by the carotid, and as it comes from the brain by the internal jugular. The cholesterine being found also in the nerves, and, of course, a large quantity of nervous matter existing in the extremities, it is desirable at the same time to make an analysis of the venous blood from the general system.

With reference to this question the following experiment was made:—

Exp. 3. A medium sized dog, about six months old, fasting, was put under the influence of ether. The carotid and internal jugular were exposed on the left side, and the animal allowed to come out from the effects of the anæsthetic. Two hours after, he was again etherized, and the blood taken from the following vessels in the order in which they are named: 1, Internal jugular; 2, Carotid; 3, Vena cava; 4, Hepatic veins; 5, Hepatic artery; 6, Portal vein. In the operation of drawing the blood from the abdominal vessels, immediately after opening the abdomen a ligature was applied to the vena cava and a little blood taken, which prevented the blood from the inferior extremities from mixing with the hepatic blood. The blood was then taken from the hepatic veins, a matter of some difficulty, as it is always more or less mingled with blood returning through the thoracic vena cava, and a ligature applied to the hepatic artery and portal vein. The blood was then drawn from the hepatic artery and portal vein.* A quantity of bile was then taken from the gall-bladder, and a portion taken from the substance of the brain. These specimens were received into carefully weighed vessels and weighed; but as I failed to make a quantitative analysis, my process of extraction not having been perfected, it is unnecessary to enter into details. They were then dried and pulverized, treated with ether, evaporated, the residue extracted with hot alcohol, allowed to evaporate spontaneously, and examined with magnifying powers of 70, 270, and 400 diameters successively. The residue of the bile and brain were found to consist of nearly pure cholesterine, but in all the other specimens, excepting that from the internal jugular, the appearance of cholesterine was doubtful. They all contained, with masses of

* The operation of collecting the blood from any particular vessel is by no means so easy as might at first be supposed. The greatest care is necessary in order to obtain it unmixed. This is particularly so in the case of the hepatic vein, the unmixed blood from which it is exceedingly difficult to obtain. In drawing blood, the operation must be done as rapidly as possible to avoid the derangements of the circulation which arise from exposure of the vessels, pressure, etc. In taking blood going to and coming from a part, it must always be taken from the vein first; as ligating or compressing the artery would of course arrest the circulation. As the blood in the arterial system is not subject to the same changes in composition as the blood in the different veins, any specimen of the arterial blood will represent the blood going to a part, unless, like the liver, it receives blood from the venous system. The collection of blood I have found the most difficult part of these investigations.

ordinary fat, crystals of stercorine.* There were a few distinct plates of cholesterine in the specimen from the internal jugular. The specimens were then treated with a solution of caustic potash and set aside. In two days, part of the potash was removed with bibulous paper and portions of the precipitates taken out, placed upon slides, and examined microscopically with one-sixth and one-twelfth inch objectives successively. The watch-glasses were then set aside, carefully protected from the dust, and examined again ten days after, when they had become entirely dry. The following was the result of the examinations of the extracts of blood from the carotid, internal jugular, vena cava, and the extract of the brain. The examination of the other specimens has nothing to do with the question now under consideration, and their description is deferred.

Blood from the carotid artery.—First examination, three days after the operation, discovered a large number of small crystals of stercorine and masses of fat; but after the most careful examination, prolonged for two hours, I failed to discover any crystals of cholesterine. The appearance is represented in Fig. 2.

The second examination, eleven days after, discovered a small quantity of cholesterine mixed with the matters noted in the first examination. This appearance is represented in Fig. 3.

Substance of the brain.—All the microscopic examinations of the extract from the brain showed crystals of cholesterine in large quantity. The crystals from the brain are described by Robin as being thinner and more elongated than those found in other situations.† This peculiarity I also noticed. The appearance is represented in Fig. 4.

Blood from the internal jugular.—In the first examination of the specimen from the internal jugular, after the blood had been treated with ether, the ether allowed to evaporate, and the residue extracted with hot alcohol, well-marked plates of cholesterine were noted. At this time it could not be discovered in any of the other specimens of blood after the most careful and patient examination. After the caustic potash has been added, the

* Stercorine, or seroline, is a non-saponifiable fatty substance resembling the cholesterine in many of its chemical properties, but fusing at a much lower temperature. It was discovered in the serum of the blood by Boudet about 1833. It crystallizes in the form of needles, which will be more particularly described when we treat of the extraction of this substance from the feces. As I have found it in great abundance in the feces, and am disposed to doubt its existence as a natural constituent of the serum of the blood, I have called it *stercorine*, for reasons which will be more fully explained further on.

† *Traite de Chimie Anatomique*, Robin and Verdeil, tome iii. p. 57.

eholesterine was demonstrated in large quantity, with a few crystals of stercorine. The appearance is represented in Fig. 5, which was drawn eleven days after the blood was collected. Another examination was made on the following day, which showed, in addition to the eholesterine, a considerable quantity of stercorine. (See Fig. 6.)

Blood from the vena cava.—The extract of the blood from the vena cava, examined eleven days after the blood was drawn, showed a large quantity of stercorine and a few crystals of eholesterine. The eholesterine was distinct but not very abundant. (See Fig. 7.)

These experiments, the first that I made on this subject, demonstrate the following facts: 1. That the brain contains a large quantity of eholesterine (which had, however, been previously established). 2. That the blood going to the brain contains a small quantity of eholesterine, while the blood coming from the brain contains a large quantity. 3. That the blood coming from the lower extremities and pelvic organs contains more eholesterine than the blood carried to them by the arterial system.

It was only necessary to confirm these statements by further investigation, to be enabled to deduce from them the following important conclusion: *i. e.* That eholesterine is formed in some of the tissues of the body; and judging from the fact that the nervous tissue is the only one in which it is found, and that the blood gains it in its passage through the great nervous centre, it is formed, in great part, by the nervous system. After the first experiment, which almost confirmed the supposition with which I had started, I directed my attention to the perfection of a process by which I might make an accurate quantitative analysis of the blood for eholesterine, so as to be able to state positively that it gained eholesterine in its passage through certain organs, and furthermore to determine the amount of increase. After a number of experiments, I fixed upon the process which I have minutely described in the first part of this article, and made the following experiments for the purpose of ascertaining the quantity of eholesterine produced in the brain.

Exp. 4. A medium sized adult dog was put under the influence of ether and the carotid artery, internal jugular, and femoral veins exposed. Specimens of blood were drawn, first from the internal jugular, next from the carotid, and last, from the femoral vein. These specimens were received into carefully weighed vessels, and weighed.

They were then analyzed for cholesterine by the process described on pages 626-629, and the following results obtained:—

	Quantity of Blood. grains.	Cholesterine. grains.	Cholesterine per 1,000 pts.
Carotid,	179.462	0.139	0.774
Internal jugular,	134.780	0.108	0.801
Femoral vein,	133.886	0.108	0.806
Percentage of increase in blood from the jugular, over the arterial blood,			3.488
Do. do. of blood from femoral vein,			4.134

This experiment shows an increase in the quantity of cholesterine in the blood during its passage through the brain and an increase, even a little greater, in the blood passing through the vessels of the posterior extremity. To facilitate the operation, however, the animal was brought completely under the influence of ether, which, from its action on the brain, would not improbably produce some temporary disturbance in the nutrition of that organ, and consequently interfere with the experiment. For the purpose of avoiding this difficulty I performed the following experiments without administering an anæsthetic.

Exp. 5. A small young dog was secured to the operating table, and the internal jugular and carotid exposed on the right side. Blood was taken, first from the jugular, and afterwards from the carotid. The femoral vein on the same side was then exposed and a specimen of blood taken from that vessel. The animal was very quiet under the operation, though no anæsthetic was used, so that the blood was drawn without any difficulty, and without the slightest admixture.

The three specimens were analyzed for cholesterine with the following results:—

	Quantity of Blood. grains.	Cholesterine. grains.	Cholesterine per 1,000 pts.
Carotid,	143.625	0.679	0.967
Internal jugular,	29.956	0.046	1.545
Femoral vein,	45.035	0.046	1.028
Percentage of increase in blood from the jugular, over arterial blood,			59.772
Do. do. of blood from the femoral vein,			6.308

Exp. 6. A large and powerful dog was secured to the operating table and the carotid and internal jugular exposed. Specimens of blood were taken from these vessels, first from the jugular, carefully weighed and analyzed for cholesterine in the usual way. The following results were obtained:—

	Blood. grains.	Cholesterine. grains.	Proportion in 1,000 pts.
Carotid,	140.847	0.108	0.768
Internal jugular,	97.811	0.092	0.947
Percentage of increase in passing through the brain,			23.307

Exp. 5 shows a very considerable increase in the quantity of cholesterine in the blood passing through the brain, while it is comparatively slight in the blood of the femoral vein. The proportion of cholesterine is also large in the arterial blood compared with other observations.

Exp. 6 shows but a slight difference in the quantity of cholesterine in the arterial blood in the two animals; the proportion in the animal that was etherized being 0.774 pts. per 1,000, and in the animal that was not etherized 0.768 per 1,000, the difference being but 0.006; but, as I had suspected, the ether had an influence on the quantity of cholesterine absorbed by the blood in its passage through the brain. In the first instance the increase was but 3.488 per cent, while in the latter it was 23.307. Unfortunately the blood was not taken from the femoral vein. I intended to take blood from the abdominal organs, but after opening the abdomen the struggles of the animal were so violent that this was impossible, and he was killed.

What are our natural conclusions, from the preceding experiments, with regard to the origin of cholesterine in the economy? It has been found that the brain and nerves contain a large quantity of this substance, which is found in none other of the tissues of the body. The preceding experiments, especially Exps. 5 and 6, show that the blood which comes from the brain contains a much larger quantity of cholesterine than the blood which goes to this organ.

The conclusion is, then, that it is produced in the brain, and thence absorbed by the blood.

But the brain is not the only part where cholesterine is produced. It will be seen by Exp. 4 that there is 4.134 per cent, and in Exp. 5, 6.308 per cent of increase in the cholesterine in the passage of the blood through the inferior extremities, and probably about the same in other parts of the muscular system. In examining these tissues chemically, we find that the muscles contain no cholesterine, but that it is abundant in the nerves; and as we have found that the proportion of cholesterine is immensely increased in the passage of the blood through the great centre of the nervous system, taken, as the specimens examined were, from the internal jugular, which collects the blood from the brain and very little from the muscular system, it is rendered almost certain, that in the general venous system, the cholesterine which the blood contains is produced in the substance of the nerves.

If this be true, and if, as I hope to show, the cholesterine be

a product of the destructive assimilation of nervous tissue, its production would be proportionate to the activity of the nutrition of the nerves; and anything which interfered to any great extent with their nutrition would diminish the quantity of cholesterine produced. In the production of urea by the general system, which is an analogous process, muscular activity increases the quantity, and inaction diminishes it, on account of the effect upon nutrition. In cases of paralysis we have a diminution of the nutritive forces in the parts affected, especially of the nervous system, which, after a time, becomes so disorganized, that although the cause of the paralysis be removed, the nerves cannot resume their functions. It is true we have this to a certain extent in the muscles; but it is by no means as marked as it is in the nerves. We should be able then to confirm the observations on animals, by examining the blood in cases of paralysis; when we should find a very marked difference in the quantity of cholesterine, between the venous blood coming from the paralyzed parts, and that from other parts of the body. With this in view I made analyses of the blood from both arms in three cases of hemiplegia, which seemed to me most suitable for such a comparison.

CASE I. Sarah Rumsby, æt. 47, affected with hemiplegia of the left side. Two years ago she was taken with apoplexy, and was insensible for three days. When she recovered consciousness she found herself paralyzed on the left side. Said she had epilepsy four or five years before the attack of apoplexy. Now she has entire paralysis of motion on the affected side, with the exception of some slight power over the fingers, but sensation is perfect. The speech is not affected. The general health is good.

CASE II. Anna Wilson, æt. 23, Irish, affected with hemiplegia of the right side. Four months ago she was taken with apoplexy, from which she recovered in one day with loss of motion and sensation on the right side. She is now improving and can use the right arm slightly. The leg is not so much improved, because she will make no effort to use it.

CASE III. Honora Sullivan, Irish, æt. 40, affected with hemiplegia of right side. About six months ago she was taken with apoplexy, and recovered consciousness the next day, with paralysis. The leg was less affected than the arm, from the first. The cause was supposed by Dr. Flint, the attending physician, to be due to an embolus. Her condition is now about the same as regards the arm, but the leg has somewhat improved.

These cases all occurred at the Blackwell's Island Hospital. The treatment in all consisted of good diet, frictions, passive motion, and use of the paralyzed members as much as possible.

A small quantity of blood was drawn from both arms in these three cases. It was drawn from the paralyzed side, in each instance, with great difficulty, and but a small quantity could be obtained.

The specimens were all examined for cholesterine with the following results:—

Table of Quantity of Cholesterine in Blood of Paralyzed and Sound Sides, in three cases of Hemiplegia.

	Blood.	Choles- terine.	Cholesterine per 1,000.
Case I. Paralyzed side.	grains. 55.458	grains. —	The watch-glass contained 0.031 gr. of a substance, but the most careful examination failed to show a single crystal of cholesterine.
Do. Sound side.	128.407	0.062	
Case II. Paralyzed side.	18.381	—	Same as Case I.
Do. Sound side.	66.396	0.062	
Case III. Paralyzed side.	21.842	—	Same as Case I.
Do. Sound side.	52.261	0.031	

The result of these examinations is very interesting: not a single crystal of cholesterine was found in any of the three specimens of blood from the paralyzed side, while about the normal quantity was found in the blood from the sound side. As the nutrition of other tissues is interfered with in paralysis, it is impossible to say positively from these observations alone, that the cholesterine is produced in the nervous system only. But the nutrition of the nerves is undoubtedly most affected; and this observation, taken in connection with the preceding experiments on animals, seem to settle where the cholesterine is produced.

We may extend our first conclusion, then, and state that the *cholesterine is produced in the substance of the nervous system.*

Before entering upon the character of cholesterine, and inquiring whether it be an excrementitious or a recrementitious product, we will endeavor to follow it out in the system and ascertain if there be any organ which separates it from the blood. In pursuing this question, the method will be adopted that has been employed in investigating its origin; that is, analyzing the

blood as it goes to and comes from certain organs. The organ which we would be led first to examine is the liver, as it is the only gland, the product of which contains cholesterine, which, if not manufactured in the gland itself, must be separated from the blood.

In the first series of experiments which I performed on this subject, I endeavored to show on the same animal the origin of cholesterine in certain parts, and its removal from the body. In these experiments, which were only approximative, as I had not then succeeded in extracting the cholesterine perfectly pure, I commenced with the arterial blood, examining it as it went into the brain by the carotid, analyzing the substance of the brain, then analyzing the blood as it came out of the brain by the internal jugular, examining the blood as it went into the liver by the hepatic artery and portal vein, examining the secretion of the liver, then the blood as it came out of the liver by the hepatic vein, examining also the blood of the vena cava in the abdomen. The analyses of the blood from the carotid, internal jugular, and vena cava have already been referred to, page 678, in treating of the origin of the cholesterine. It will be remembered that there was a large quantity of this substance in the internal jugular, and but a small quantity in the carotid, showing that it was *formed* in the brain. I now give the conclusion of those observations, which bears upon the *separation* of the cholesterine from the blood.

Exp. 7. Specimens of blood were taken from the hepatic artery, portal vein and hepatic vein, and a small quantity of bile from the gall-bladder. These specimens were treated in the manner already indicated in *Exp. 3*; *i. e.*, evaporated and pulverised, extracted with ether, the ether evaporated, and the residue extracted with boiling alcohol, this evaporated, a solution of caustic potash added and then subjected to a microscopic examination.

Blood from the portal vein.—Microscopic examination of the extract from the portal vein showed quite a number of crystals of cholesterine, which are represented in *Fig. 8*. These were observed after the fluid had nearly evaporated.

Blood from the hepatic artery.—Microscopic examination of the extract from the hepatic artery, made after the fluid had nearly evaporated, showed a considerable amount of cholesterine; more than was observed in the preceding specimen. (See *Fig. 9*.) There were also observed a few crystals of stercorine, represented in *Fig. 10*.

Blood from the hepatic vein.—The first examination of the extract from the hepatic vein, which was made just before the potash was added, showed a number of fatty masses with some crystals of stereorine. The solution of potash was then added, and two days after, another careful examination was made, discovering nothing but fatty globules and granules. (See Fig. 11.) The watch-glass was then set aside, and was examined eleven days after, when the fluid had entirely evaporated. At this examination, a few crystals of cholesterine were observed for the first time. (See Fig. 12.) There were also a number of crystals of margaric and stearic acid.

Bile.—All the examinations of the extract from the bile showed cholesterine; the precipitate consisted, indeed, of this substance in a nearly pure state. Fig. 13 represents some of the crystals which were observed in this specimen.

This series of experiments being taken in connection with the first observations on the carotid and internal jugular, while the one series demonstrates pretty conclusively that cholesterine is formed in the brain, the other shows that it disappears, in a measure, from the blood in its passage through the liver, and is found in the bile. In other words, it is formed in the nervous tissue, and prevented from accumulation in the blood by its excretion by the liver. This suggests an interesting series of inquiries; and this fact, substantiated, would be as important to the pathologist as to the physiologist. But in order to settle this important question, it is necessary to do something more than make an approximative estimate of the quantity of cholesterine removed from the blood by the liver. The quantity which is thus removed in the passage of the blood through this organ should be estimated, if possible, as closely as the quantity which the blood gains in its passage through the brain. But this estimate is more difficult. The operation for obtaining the blood, in the first place, is much more serious than that for obtaining blood from the carotid and internal jugular. It is very difficult to obtain the unmixed blood from the hepatic vein; and the exposure of the liver, if prolonged, must interfere with its eliminative function, in the same way that exposure of the kidneys arrests, in a few moments, the flow from the ureter. It is probable, however, that the administration of ether does not interfere with the elimination of cholesterine by the liver as it does, apparently, with its formation in the brain. Anæsthetics, we know, have a peculiar and special action on the brain, but do not interfere with the functions of vegetative life, like secretion and excretion; and, we would suppose, would not interfere

with the depurative function of the liver. It is fortunate that this is the case, for the operation of taking blood from the abdominal vessels is immensely increased in difficulty by the struggles of an animal not under the influence of an anæsthetic, so much so, indeed, that I failed entirely in obtaining any blood from one animal (the one used in Exp. 6), which was not etherized. It was a very powerful dog, and his struggles were so violent that it was impossible to collect the blood accurately from the abdominal vessels, and the attempt was abandoned. With a view of settling the question of the disappearance of a portion of the cholesterine of the blood in its passage through the liver, by an accurate quantitative analysis, I repeated the operation for drawing blood from the vessels which go into, and emerge from the liver. In my first trial the blood was drawn so unsatisfactorily, and the operation was so prolonged, that I did not think it worth while to complete the analysis, and abandoned the experiment. In the following one I was more successful.

Exp. 8. A good-sized bitch (pregnant) was brought completely under the influence of ether, the abdomen laid freely open, and blood drawn, first from the hepatic vein, and next from the portal vein. The taking of the blood was entirely satisfactory, the operation being done rapidly, and the blood collected without any admixture. A specimen of blood was then taken from the carotid to represent the blood from the hepatic artery.

The three specimens of blood were then examined in the usual way for cholesterine, with the following results:—

	Blood. grains.	Cholesterine. grains.	Cholesterine in 1,000 pts.
Arterial blood, . . .	159.537	0.200	1.257
Portal vein, . . .	168.257	0.170	1.009
Hepatic vein, . . .	79.848	0.077	0.964
Percentage of loss in arterial blood in its passage through the liver, . . .			23.309
Do. of portal vein, . . .			4.460

This experiment proves positively that there was good ground for supposing from Exp. 7, namely, that cholesterine is separated from the blood by the liver; and here we may note, in passing, a striking coincidence between the analysis in Exp. 6, when the blood was studied in its passage through the brain, and the one just mentioned, when the blood was studied in its passage through the liver. *The gain of the arterial blood in cholesterine in passing through the brain was 23.307 per cent, the loss of this substance in passing through the liver is 23.309 per cent.* There must be, of course, the same quantity sepa-

rated by the liver that was formed by the nervous system, it being formed, indeed, only to be separated by this organ, its formation being continuous, and its removal necessarily the same, in order to prevent its accumulation in the circulating fluid. The almost exact coincidence between these two quantities, in specimens taken from different animals, though not at all necessary to prove the fact just mentioned, is still very striking.

It is shown by Exp. 8 that the portal blood, as it goes into the liver, contains but a small percentage of cholesterine over the blood of the hepatic vein, while the percentage in the arterial blood is large. The arterial blood is the mixed blood of the entire system, and as it probably passes through no organ before it gets to the liver which diminishes its cholesterine, contains a quantity of this substance, which must be removed. The portal blood, coming from a limited part the system, contains less of this substance, though it gives up a certain quantity. In the circulation of the liver, the portal system largely predominates, and is necessary to other important functions of this organ, such as the production of sugar and fat. Soon after the portal vein enters the liver, its blood becomes mixed with that from the hepatic artery,* and from this mixture the cholesterine is separated. It is only necessary that blood, containing a certain quantity of cholesterine, should come in contact with the bile-secreting cells, in order that this substance be separated. The fact that it is eliminated by the liver is proven with much less difficulty than that it is formed in the nervous system. In fact, its presence in the bile, the necessity of its constant removal from the blood, which is consequent on its constant formation and absorption by this fluid, are almost sufficient in themselves to warrant the conclusion that it is removed by the liver. This, however, is put beyond a doubt by the preceding analysis of the blood going to and coming from this organ.

Another link, then, is added to the chain of facts which make up the history of cholesterine. The first is that—

Cholesterine is formed in the brain and nervous system, and absorbed by the blood.

* According to Robin, the branches of the hepatic artery are distributed almost entirely in the interlobular plexuses, and on the walls of the hepatic duct and portal vein, and do not find their way into the substance of the lobules.—*Dictionnaire de Médecine, de Chirurgie, de Pharmacie, des Sciences accessoires et de l'Art vétérinaire* de P. H. Nysten; onzième édition revue et corrigée. Par E. Littré et Ch. Robin. Paris, 1858. Article Foie.

The second, which has just been proven, is that—

Cholesterine, formed in these situations, and absorbed by the blood, is separated from the blood in its passage through the liver.

The next question, in following out this line of inquiry, is, What becomes of the cholesterine which is separated from the blood? This question is very easily answered, and necessitates only an examination of one of the products of the liver, the bile.

The Bile.—In the few remarks with which I have prefaced this article, I spoke of the various opinions which are held among physiologists with reference to the function of the bile—some regarding it as purely excrementitious, others placing it among the recrementitious fluids. I detailed experiments which led me to think that it had two distinct functions: one, which is recrementitious, and is probably concerned in digestion to an important degree, but which it is not designed to take up in this connection; the other, which is excrementitious, and which is necessarily taken up in our discussion of the important principle which we are now considering. A glance at the composition of the bile will show that it is an exceedingly complex fluid; and physiological investigations into the destination of certain of its ingredients, by Bidder and Schmidt, Dalton and others, have shown that they are not discharged from the body, but resorbed by the blood; though the failure to detect them in the portal blood by the appropriate tests, shows that in this resorption they probably undergo some alteration.* These substances, which have heretofore been considered the most important ingredients of the bile, though their function is obscure, are the glyco-cholate and tauro-cholate of soda, discovered by Strecker in the bile of the ox in 1848. The following is the composition of the bile given in Dalton's physiology, which is "based on the calculations of Berzelius, Frerichs, and Lehmann."†

* For a very complete account of the bile, with original investigations into the destination of the biliary salts, the reader is referred to an article published by Prof. John C. Dalton, Jr., in the *American Journal of the Medical Sciences*, October, 1857, and the chapter on bile in Dalton's Physiology.

† Dalton's Physiology, second edition, page 158.

Composition of Ox Bile.

Water,	585.00
Glyco-cholate of soda,	90.00
Tauro-cholate of soda,	
Biliverdine,	13.42
Fats,	
Oleates, margarates, and stearates of soda and potassa,	15.24
Cholesterine,	
Chloride of sodium,	
Phosphate of soda,	
Phosphate of lime,	
Phosphate of magnesia,	
Carbonates of soda and potassa,	1.34
Mucus of the gall-bladder,	
	1000.00

Of the above ingredients of the bile, we have the biliverdine, which is simply a coloring matter, the fats, with the oleates, margarates, and stearates, which, with the biliary salts, are said to hold the cholesterine in solution, the chloride of sodium, present in all the animal fluids, the phosphates and carbonates, which are simply excreted, and are also ingredients of the urine, leaving, as the most important constituents, of which the function is least understood, the biliary salts and the cholesterine. The biliary salts are probably recrementitious; but the cholesterine is one of the great products of the waste of the system. The bile, then, presents the combined character, so far as its chemical composition is concerned, of a secretion and of an excretion. Let us now contrast these two properties, and see what this fluid has in common with the secretions, and how it obeys the laws which regulate the excretions. In doing this we will first contrast some of the important distinctions between these two classes of products.

Secretions are characterized by certain elements which are manufactured in the substance of the gland, and are found in no other situation. Such is the pancreatine for the pancreatic juice, the pepsin for the gastrid juice, the ptyaline for the saliva, and, we may add, the glyco-cholate and tauro-cholate of soda for the bile.

These substances first make their appearance in the substance of the gland itself; they do not pre-exist in the blood; they are discharged from the gland for a special purpose, and when there is no necessity for their action, the discharge does not take place. Illustrations of this are to be found in the digestive fluids, which are true secretions; only poured when this function is called into action by the ingestion of food, and not discharged from the body, but their elements taken up again by the blood when

their function is accomplished. Thus the gastric or pancreatic fluids are never secreted until food is taken into the alimentary canal, and are resorbed with the digested matters.

The flow of the secretions is intermittent, and the gland, during the period of repose, manufactures the elements of the secretion, which are washed out at the duct when the appropriate stimulus (of food, for example) causes a determination of blood to the organ. The gland manufactures the elements of the secretion, and the blood furnishes the menstruum, the water, by means of which they are dissolved and emptied into the duct. If we expose the pancreas of an animal during the intervals of digestion, it is pale and bloodless; no fluid flows from the duct; but the elements of the pancreatic juice are, nevertheless, in the gland, for if we macerate it in water, we may dissolve them out, and make an artificial pancreatic juice which will have all the reactions and digestive properties of the natural secretion. But if we expose the pancreas of an animal during digestion, the gland is turgid with blood; the secretion flows from the duct, and the products of the gland are being washed out by the blood—a process which we imitated when we dissolved them out by maceration in water. The late brilliant experiments of Bernard have shown that the function of the glands is regulated by the nervous system, and that the galvanization of certain nerves, by which the nervous force is imitated, will cause a determination of blood to the organ, and induce secretion, while the galvanization of other nerves will contract the vessels, and arrest secretion.

The substances which characterize the secretions, as they are manufactured in the glands and do not pre-exist in the blood, do not accumulate in the blood when the gland is removed, or its functions are interfered with.

The distinctive characters of the secretions, in fact, may be summed up thus:—

Their elements first appear in the glands, and do not pre-exist in the blood. They are not discharged from the body (with the exception of the milk, which is destined for the nourishment of the child). Their flow is intermittent. They are destined to assist in some of the nutritive functions of the body.

Excretions, of which the urine may be taken as a type, have entirely different characteristics.

Excrementitious substances do not first make their appearance in the organs which separate them, but are produced in the general system.

They pre-exist in the blood, having been absorbed by this

fluid from the parts of the system in which they are formed, are carried to particular organs, and separated from the blood for the sole purpose of being expelled from the body. An illustration of this is to be found in the urea, which has been detected in the blood and urine, and some of the tissues of the body. This substance, one of the most important excrementitious products, is absorbed by the blood from certain parts of the system, carried to the kidneys, there separated from the blood, and discharged from the body. Though the gastric and pancreatic fluids, and all the secretions proper, are resorbed with the food after they have acted upon it, the urea may remain any length of time in the bladder, but it is never absorbed.

The flow of the excretions is constant. No period of repose is necessary for the gland to manufacture their elements, as they all pre-exist in the blood. Nutrition is constant, and destructive assimilation, or waste, which necessitates nutrition or repair, is likewise constant. The blood supplies all the wants of the system, and receives all the products of its decay. As the blood is continually being impoverished, it must be regenerated from without; and this is done by food, which is prepared for absorption by digestion. The secreted fluids are mostly concerned in digestion, and as this is an occasional process, the secretions are intermittent. But waste is continually going on, and excrementitious substances are continually forming; and while the necessity for the secretions is occasional, the necessity for the excretions is constant. Though the actual discharge of the latter from the body is occasional, they are constantly being separated from the blood, and accumulate in receptacles, whence they are discharged at appropriate intervals. No such receptacles exist for the secretions proper, except in the instance of the milk, which accumulates in the ducts of the mammary gland, and is the only secretion which is discharged from the body.

If the secreting glands take on an excretory function, as is an occasional pathological occurrence, their flow becomes continuous. We have an example of this in the occasional separation of the urea from the blood by the gastric tubuli. When the kidneys become so affected by disease as to be unable to separate the urea from the system, the accumulation of this excrement in the blood frequently induces other organs to attempt its removal. The gastric tubuli take on that function, and produce a fluid which contains urea. The gastric juice, if we may now so term it, is no longer a secretion, but an excretion, and we find that its flow is no longer intermittent and dependent upon the stimulus of food introduced into the stomach, but

is constant, and continues until the irritation caused by the decomposing urea in the stomach induces an inflammation which prevents further secretion. Thus we have an example of an intermittent *secretion*, characterized by a substance manufactured in the gland and not pre-existing in the blood, changed into a constant *excretion*, characterized by a substance which is not manufactured in the gland but pre-exists in the blood.

The substances which characterize the excretions accumulate in the blood when the organ which eliminates them is removed, or its functions are interfered with. It is to this fact that we owe our knowledge that urea pre-existed in the blood. It was detected in that fluid when it had accumulated in animals from which the kidneys had been removed, and in cases of Bright's disease of the kidneys, before our chemical processes were sufficiently delicate to detect it in healthy blood, when the quantity is kept down to a very low standard by its constant elimination by the kidneys.

The characters of the excretions, then, are entirely opposite to those of the secretions.

Their elements pre-exist in the blood, and are not manufactured in the substance of the organs which eliminate them. Their flow is constant. They are separated from the blood merely to be discharged from the body, and are not destined to assist in any of the nutritive functions of the body.

Having thus contrasted the secretions and the excretions, let us examine the bile and note what are the characters which it has in common with either or both of these products.

The bile is characterized by two kinds of principles. One of them, the glyco-cholate and tauro-cholate of soda, *manufactured* in the liver, found in no other fluid than the bile, does not pre-exist in the blood, and associates the bile with the secretions. The other, the cholesterine, pre-exists in the blood and is simply *separated* from it by the liver, giving the bile one of the characters of an excretion.

The biliary salts (the glyco-cholate and tauro-cholate of soda) are discharged into the intestinal canal for a special purpose; and this discharge takes place at the beginning of the digestive act. If we expose the liver and gall-bladder of a dog which has not taken food, we will find the gall-bladder distended with bile; but if we examine these organs when digestion is going on, the gall-bladder will be found nearly empty. It is true that after prolonged fasting the bile is discharged into the alimentary canal, but it must be remembered that it contains another ingredient, the cholesterine, which must be discharged from the

body, as we will see presently. The biliary salts are not discharged from the body. Dr. Dalton has shown that the substances extracted from the contents of the large intestine by evaporation, extraction of the residue with alcohol and precipitation with ether, will not react with Pettenkoffer's test, which is a very delicate test for the biliary salts. I have treated the feces of the human subject in the same way with the same result. These salts, therefore, are not discharged from the body unchanged. The next question to determine is whether they are discharged from the body in a modified form. They contain a certain amount of sulphur, of which, as has been shown by Bidder and Schmidt, only one-fiftieth part of the entire quantity which enters the intestine with the bile can be detected in the feces. As sulphur is an elementary substance, it cannot be decomposed; and the biliary salts, in this passage down the alimentary canal, must be absorbed. It is true that these salts cannot be detected in the blood coming from the intestines, but we cannot detect the pancreatin of the pancreatic juice, the pepsin or lactic acid of the gastric juice in the portal blood, yet these are absorbed by the mucous membrane of the intestinal tube, changed by their union with the elements they have digested. It is probable that an analogous change takes place in the glyco-cholate and taurocholate of soda, which prevents them from being detected in the blood by the ordinary tests. These facts, also, place the bile among the secretions.

On the other hand, cholesterine pre-exists in the blood, having been absorbed by this fluid from certain parts of the system, is carried to the liver, and here separated for the sole purpose of being discharged from the body. The same general remarks apply to this substance as to the urea. This places the bile among the excretions.

The flow of the secretions is intermittent. This is not absolutely true of the bile, but the discharge of this fluid is remittent. Dr. Dalton* has reported a series of interesting experiments upon an animal with a duodenal fistula. In this observation ten grains of dry biliary matter were discharged into the duodenum of a dog weighing thirty-six and a-half pounds, immediately after feeding. At the end of the first hour it had fallen to four grains; it continued at three and a-half to four and a-half grains up to the eighteenth hour, when the quantity was inappreciable; at the twenty-first hour it was one grain, the twenty-fourth, three and a-quarter grains, and the twenty-fifth three grains. The fluid was drawn for fifteen minutes each

* Dalton on the Constitution and Physiology of the Bile. Loc. cit.

time, evaporated to dryness, extracted with absolute alcohol, precipitated with ether, the ether precipitate dried, and weighed as representing the quantity of biliary matter present. These experiments apply to the time when the bile is discharged into the intestine; but as most animals have a gall-bladder, which collects the bile as it is secreted, it does not show when this fluid is formed by the liver. Schwann, Bidder, and Schmidt, Arnold, Kölliker, and Müller, have made experiments bearing upon the latter point, by ligating the ductus communis choledocus and making a fistula into the fundus of the gall-bladder. The experiments of these observers vary somewhat with regard to the time when the secretion of the bile is at its maximum. In the animal referred to on page 620, in which a fistula was made into the fundus of the gall-bladder, the bile was collected for thirty minutes immediately after feeding, one hour after, and then at intervals of two hours during the remainder of the twenty-four hours. The specimens of bile thus collected were carefully weighed, evaporated to dryness, and the proportion of dry residue taken. The accompanying table shows the results of these observations, which were made twelve days after the operation, when the animal, which weighed originally twelve pounds, had lost two pounds. His appetite was ravenous at the time of the experiment.

Table of the variations of the bile in the twenty-four hours. At each observation the bile was drawn for precisely thirty minutes. Dog with a fistula into the gall-bladder. Weight ten pounds.

Time after feeding.	Fresh Bile.	Dried Bile.	Percentage of Dry Residue.
	grains.	grains.	
Immediately,	8.103	0.370	4.566
One hour,	20.527	0.586	2.854
Two hours,	35.760	1.080	3.023
Four hours,	38.939	1.404	3.605
Six hours,	22.209	0.987	4.450
Eight hours,	36.577	1.327	3.628
Ten hours,	24.447	0.833	3.407
Twelve hours,	5.710	6.247	4.325
Fourteen hours,	5.000	0.170	3.400
Sixteen hours,	8.643	0.309	3.575
Eighteen hours,	9.970	0.277	2.778
Twenty hours,	4.769	0.170	3.565
Twenty-two hours,	7.578	0.293	3.866
Twenty-four hours,	15.001	0.885	5.233

This table shows a regular increase in the quantity of bile

discharged from the fistula from the time of feeding up to four hours after. It diminished at the sixth hour, rose again at the eighth hour, but then gradually diminished to the fourteenth hour. We then have a slight increase at the sixteenth and eighteenth hours, and the twentieth hour it falls to its minimum. It then increased slightly the twenty-second hour, and mounted considerably the twenty-fourth hour, when the observations were concluded. Disregarding slight variations in the quantity, which might be accidental, it may be stated in general terms, that *the maximum flow of bile from the liver is from the second to the eighth hour after feeding; during which time it is about stationary. In this experiment it was at its minimum the twentieth hour after feeding.* This observation agrees with those of Bidder and Schmidt as regards the time when the bile begins to increase in quantity; but these observers state that it is at its maximum at the twelfth to the fifteenth hour. This, however, is not material to the question now under consideration. We wished to establish the fact that the quantity of bile secreted varied considerably during the various stages of the digestive act; a character which approximates it to other secretions. The flow of the bile is not intermittent, because it contains a substance which is excrementitious; but it is remittent, having a definite relation to the digestive act, because it contains substances which are excrementitious and are in some way connected with the process of digestion.

The continuous, though remittent, flow of the bile allies it with the excretions. There is no time, in health, when the bile is not separated from the blood. In animals that go through the process of hibernation, the bile continues to be secreted, though no food is taken into the alimentary canal. Nutrition, though much diminished in activity, goes on during this state, and the urea and cholesterine must be separated from the blood. The formation of the bile and urine, therefore, is not interrupted. The bile is secreted also in the foetus, before any nourishment is taken into the alimentary canal, when none of the other digestive fluids are formed. This character it has in common with the urine, and this places it among the excretions.

The elements of secretion never accumulate in the system when the secretion is interfered with; while the elements of excretion do accumulate in the blood in such cases, and produce their toxic effects. Experimenters have often analyzed the blood for the biliary salts in cases of serious disease of the liver, marked by symptoms of bile poisoning, regarding these as the only important elements of the bile; but they have never been

detected. I have made no observations on this point, for the fact that the glyco-cholates and tauro-cholates of soda do not accumulate in the blood in diseases of the liver has long been settled. This stamps these substances as products of *secretion*; but we will see when some of the pathological conditions of the cholesterine are taken up, that this substance does accumulate in the blood when the functions of the liver are seriously interfered with, which marks it as a product of *excretion*.

It seems to me that enough has been said with regard to the function of the bile to convince the reader that this complex fluid has two important elements which have two separate functions.

First. *It contains the glyco-cholate and tauro-cholate of soda; which are not found in the blood, are manufactured in the liver, are discharged mainly at a certain stage of the digestive process, are destined to assist in some of the nutritive processes, are not discharged from the body, and, in fine, are products of secretion.*

Second. *It contains cholesterine; which is found in the blood, is merely separated from it by the liver, and not manufactured in this organ, is not destined to assist in any of the nutritive processes, but merely separated to be discharged from the body, and is a product of excretion.*

These two propositions, and more especially the second, being established, it becomes our task now to follow out the cholesterine after it has been discharged from the liver into the small intestine. If it be discharged from the body it must be by the rectum, and to complete the history of cholesterine we find it necessary to study the feces.

The Feces.—It is not my object to consider all the effete matters which go to make up the feces, though it must be acknowledged that our information on this subject is very limited. Following the cholesterine in its passage down the alimentary canal has opened a new subject for investigation, which it will be impossible to do entire justice to in this paper. There is a field for a long series of investigations into this part of our subject, which I hope to be able to cultivate to some extent in the future, and add something to the history of the substance we have been considering. At present I shall only endeavor to demonstrate the fact that cholesterine, in a modified form, is discharged with the feces, and not attempt to treat of the conditions which modify the excretion of this substance (upon which as yet I have no data), which are of the last importance to the practical physician.

It is stated by some of the most reliable authors on physiology and physiological chemistry that cholesterine is found in

the fecal matters. Robin and Verdeil say: "*Ce principe immediat se trouve a l'etat normal dans le sang, la bile, le foie, le cerveau, les nerfs, le cristallin et les matieres fecales.*" Many other authors refer to it as found in the feces, and it was with that belief, that, in the experiments which form the basis of this article, I deferred my analyses of the feces till I had completed the observations on the blood, and then analyzed them, satisfied that I would find cholesterine, with the view to determine the variations, etc., in its quantity. When after a careful and prolonged examination of many specimens of feces I was unable to extract any cholesterine, I endeavored to ascertain what observer had established its presence. Though it is mentioned by so many as present in the feces, I could find no mention of any one who had established this point; and in some of the analyses of Simon, I found that he had noted its absence in certain specimens of feces. I found also that Marcet, who published some elaborate analyses of the feces in the *Philosophical Transactions*, in 1854 and 1857, noted the absence of cholesterine in the normal feces of the human subject. We have already seen how conclusively the experiments on the blood from various parts of the system point to the excrementitious character of the cholesterine, showing us even in what part of the system it is found, and where it is eliminated; but it is undoubtedly one of the most important characters of an excretion that it should be discharged from the body, and I was unable for a time to convince myself that it was discharged. After evaporating the feces to dryness, pulverizing, extracting thoroughly with ether, decolorizing with animal charcoal, evaporating the ether and extracting the residue with boiling alcohol, I allowed the alcohol to evaporate, added a solution of caustic potash, and kept the mixture at a temperature near the boiling point for three and a-quarter hours. The potash was then carefully washed away in a filter, the residue redissolved in ether and extracted with hot alcohol as before, and the alcoholic extract set aside to evaporate. A number of days passed without any signs of crystallization. The residue was, of course, non-saponifiable; but it differed from the cholesterine by being melted at a much lower temperature, though it presented the red color with sulphuric acid which is said to be characteristic of the latter substance. It was examined carefully with the microscope daily, and after five or six days, to my great satisfaction, crystals began to form; but they were at first so indistinct that their form could not be clearly made out. These crystals, however, increased in size and number, and in a short time presented all the characteristics of *seroline*. In about ten

days the whole mass had crystallized, making one of the most superb exhibitions of crystals that could be imagined. The seroline crystallizes in the form of delicate transparent needles, which have a beauty under the microscope which could be but poorly imitated by the most delicate steel plate engraving. This substance, from its being found in such large quantities in the feces, I have spoken of as *stercorine*.

Before taking up the changes which the cholesterine undergoes in its passage down the alimentary canal, I will say a few words with regard to the stercorine, which will play an important part in this connection.

[To be continued.]

SALIVARY CALCULUS.

Reported by L. C. LANE, M.D., Professor of Physiology in the Medical Department of the University of the Pacific, San Francisco.

A few weeks ago, I was consulted by a gentleman in reference to a tumor situated in the soft parts immediately posterior to the symphysis of the maxilla inferior. On examination, I found that the tissues around the orifice of the excretory duct of the sub-lingual gland were much hypertrophied, and elevated in crest-like ridges, similar to a cock's comb, some of which prominences were nearly one-third of an inch in height, and were in a high state of inflammation. The salivary secretion was not interfered with from the duct, but it was continually being poured out in much profusion. On examination of the soft parts beneath the posterior to the chin, indurated enlargement was readily perceived in them. The appearance of the whole was such as to awaken the suspicion that the tumor was of a malignant character, and perhaps might finally require extirpation, in order to effect either a palliative or a permanent cure.

The patient was ordered some simple topical application to the part, together with the use of dilute aqua chlorinata, as a lotion for the mouth, of which the secretions were exceedingly fetid, and ordered him to return in a few days. On his return the next time, there was found to be a small amount of purulent matter escaping from the outlet of the salivary gland. A small probe was introduced into this duct, yet nothing unusual could be felt. The patient returned again in nearly a week afterwards, when I found that an opening had formed in the tumor, more than half an inch behind the exterior to the normal excretory duct of the sub-lingual gland, inside of the mouth and close to the jaw; from this opening, he said that he had "picked out a

small stone." The stone proved to be a salivary calculus, weighing nearly an eighth of an ounce.

This concretion was found to be composed of concentric layers of white lime-like substance. Upon pulverizing a small portion of it, and testing with a solution of nitrate of silver, the yellow reaction was shown which characterizes the crystalline phosphates,—showing that it was chiefly composed of the phosphate of lime.

After the discharge of this calculus, the ranula-like enlargement beneath the tongue rapidly subsided, and the man was restored to usual health. On inquiry, I learned that this tumor had been of several months' standing, previous to his applying for any medical assistance; that sometimes it had been much swollen and painful, when the swelling would subside again.—*San Francisco Medical Press.*

VACCINATION IN WHOOPING-COUGH.

To the Editor of the Lancet,

SIR:—During the spring of this year, pertussis prevailed epidemically amongst children in this parish and surrounding district. As several of them had not been vaccinated, I availed myself of the opportunity of trying the effects of vaccination as a remedy for that disease.

I selected ten cases of uncomplicated whooping-cough. A few days after its employment, I found the symptoms greatly mitigated—the severity of the cough was much lessened, and the intervals between the paroxysms were lengthened. In all the cases the disease progressed favorably, and was shorter in duration than it usually is by the ordinary method of treatment.

The ages of the children varied from three months to two years, and the time of employing it was about the third week of the disease. No medicine was used in any of the cases, with the exception of gentle laxatives. Vaccination as a remedy for whooping-cough was first proposed in Germany, and is not only practised in that country, but also in America.

About thirty years ago, it was introduced into this country, and although favorably spoken of at the time, yet it was allowed to fall into disuse. Whether children so treated will enjoy an immunity from small-pox, I am unable to say; but I may mention that in three of the cases in which I attempted to revaccinate after the removal of the disease, the virus had no effect.

I am, Sir, your obedient servant,

R. C. RUSSEL, L.R.C.S.E.

—*London Lancet.*

Book Notices.

THE DENTIST'S MEMORANDUM. A Book of Engagements, and Manual of Ready Reference. For 1863. By C. M. CLEVELAND, M.D., Cincinnati: BRADLEY & WEBB, Printers.

This is a book of blanks and references, designed for the use of Dentists, and to serve the same purpose with them as the "Physician's Visiting List and Memorandum Book," does to the practitioner of medicine. We think the dentists will appreciate it as a very useful work, and will patronize it accordingly.

ON MEDICAL PROVISION FOR RAILROADS, AS A HUMANITARIAN MEASURE, AS WELL AS A SOURCE OF ECONOMY TO THE COMPANIES. By EDMUND S. F. ARNOLD, M.D., Fellow of the New York Academy of Medicine, &c., &c. New York: BAILLIERE BROTHERS, 440 Broadway. 1862.

This is a pamphlet of 47 pages, embracing two papers; one read before the New York State Medical Society, Feb. 5th, '62, and the other before the Surgical Section of the New York Academy of Medicine, Oct. 28, 1862. The subject discussed in these papers, namely, the establishment of better provisions for the care of persons injured on railroads, is certainly worthy of careful consideration. The author has evidently bestowed upon it much attention, and his papers should be extensively circulated and read.

The outline of the plan advocated by Dr. ARNOLD, is contained in the three following resolutions, appended to the paper read to the Surgical Section of the Academy of Medicine, and adopted by that Section, viz.:—

1st. That in the opinion of this body the loss of many lives would be avoided, and a great diminution of suffering brought about by the adoption of a system of local medical provision on our railroads to meet the cases of casualty occurring thereon.

2d. That such a medical provision could readily be made by fitting up a small room at main stations, and at distances not more than ten miles apart, where practicable, for temporary hospital purposes, and by providing the same with suitable apparatus, and appointing a competent surgeon in the neighborhood to attend on call as occasion may arise.

3d. That, when important stations are too far apart to admit of such an arrangement, suitable apparatus should be carried in the cars themselves, and stations be established where the most competent practitioners of surgery are to be found.

CHARTER, CONSTITUTION, BY-LAWS, AND FEE-BILL OF THE EATON MEDICAL SOCIETY, AT EATON, OHIO.

We have received a copy of this pamphlet from Dr. R. WALLACE, of Lewisburgh, Ohio; for which he has our sincere thanks.

Editorial.

WM. HOPPS ON TRIAL FOR MURDER.

A MEDICO-LEGAL CASE.

In a medico-legal aspect, the trial of Wm. Hopps, now (Dec. 25th,) progressing in the Circuit Court, is of much interest. The following, copied from the report in the *Chicago Daily Times*, states very fairly the grounds on which the defence is made, while the testimony of Dr. McFARLAND will be read with special interest. The opinions expressed by Dr. McFARLAND, in relation to the mind of the prisoner, were fully sustained by all the medical witnesses, who were called on to testify in the case:—

Yesterday was the sixth day of the trial of William Hopps in the Circuit Court of this county, for the murder of his wife. The fact of the commission of the homicide by the prisoner has not been denied by counsel for the defence, but, upon the other hand, openly admitted. The defence rest their whole case upon the plea of insanity. The testimony has been tedious, by reason of its great length, and we trust is about drawing to a close. The defence have unquestionably proved the actions of the prisoner's mind at least very morbid and erratic. He seems to have labored under a delusion of his wife's infidelity, and has assigned for his belief the most frivolous reasons, having no bearing upon the case, but which, however, seemed to him the most conclusive proofs, establishing the truth of his suspicion beyond the possibility of a doubt. For a long series of years,

commencing with a trivial lawsuit about a horse, he has imagined that his neighbors had combined against him, and that the Masons, of which order he was a member, were seeking his life. He did not know his most intimate friends upon some occasions, and was subject at times of mental depression or hilarity. His suspicion of his wife found vent in torrents of abuse, principally poured out during the night time. He was restless, uneasy, singular. From these things, and many others, including his manner, appearance, voice, incoherent conversation, rarely confining himself to one subject, but wandering among ideas suggested by the subject before his mind, his physical condition, pulse from ninety to one hundred and twenty, whereas it should be about seventy, his apparent want of realization of guilt, the insanity of his brother, and his own seeming justification of his crime, and other things occurring to medical men, upon a careful examination, have induced some of the most scientific men in the State, including the Superintendent of the State Insane Asylum, to pronounce him, in the most unequivocal manner, insane and incapable of exercising any judgment in the commission of the crime.

THE TESTIMONY OF DR. MCFARLAND.

Andrew McFarland called and sworn upon the part of the defence:

"I have been a physician for the past twenty-five years, and am now the Superintendent and Physician of the Illinois Insane Asylum. The treatment and management of the insane is now the exclusive study of my life. I had two interviews last Wednesday with the prisoner; I was not introduced to him in my real capacity but as a mere casual caller. I made no special examination of the physical condition of the prisoner, but was struck with his remarkable outward appearance. There were but three expressions to his countenance, which were non-responsive to the spirit of his narrations. One expression of his face was blank solidity; another was expression of profound conclusion, mingled with inquiry, when he thought he had established a fact; the third expression was when he smiled. The prisoner has but one laugh, it cannot be called idiotic or either silly, but a fatuous laugh. The pupil of his eye is immoveable, neither expanding or contracting with the admission or exclusion of light. I believe it has passed beyond the control of his intellect, and only responded to the play of his passions, and I thought I could detect something fiendish in it. When put upon a train of ideas his mind seemed to labor with difficulty,

and it travelled off to collateral facts as a matter of relief or rest. When I was introduced to him I expressed surprise that he could be a prisoner, and this made it incumbent upon him to tell me the circumstances of his arrest. He told me the various stories others have given to the jury—the commencement of his troubles at the time of the horse difficulty, the toast, the onions, the veal, and the circumstances at the Sherman House about the Masons, and they all struck me as the creations of his fancy. His voice, like his countenance, never changes, except when he has reached and expressed a conclusion of his wife's infidelity, when it dropped into a kind of pitiful monotone. After giving the names of several persons with whom he knew his wife had been unfaithful, he used the expression 'and, indeed, with almost everybody,' as if he thought her criminality was indiscriminate. The measure of the disease of the prisoner's brain may be classed under the single idea of an insane delusion, which is a belief in the reality of things which can have no existence, according to any probable experience or testimony; something in violation of universal experience. All definitions of insanity are more or less fallacious and inaccurate, on account of the peculiar disease to which they are applied, and in my definition of an insane delusion I do not mean that the facts which are believed to be true must in all cases be facts which cannot exist under any circumstances that are impossible; but that their existence, if depending upon the proofs the lunatic adduces for his belief, would be an impossibility or improbability. A delusion has an infinitely stronger effect upon the mind of the subject than the sober connection of a fact can have upon the mind of a rational person. Mr. Frenchazel, lately confined in the Illinois Insane Asylum, is a case in point. His mind was unimpaired, save in a single respect: he imagined the sheriff was after him for the purpose of hanging him. He was confined in the fourth story of the building, and the window of his room was secured by grating deemed to be sufficiently strong to resist the strength of any man. Frenchazel, laboring under his delusion, fancied the sheriff was ascending the stairs, and, tearing the grating from his window, threw himself out upon the brick pavement, and was, of course, killed by the fall. The conviction of the fact that the sheriff was approaching with just such intentions would not have impelled a sane man to throw himself from that window. I believe if a man was laboring under the delusion that it was necessary for him to burn up his house, he would lay it upon the fire without a second's hesitation. These delusions are as variable as the imagination of man, and

there exists no possible combination of facts out of which they cannot be fashioned. Rarely any two delusions are alike. The prisoner may have two brothers like himself laboring under insane delusions; one may imagine himself an apostle sent to convert the world, while the other may imagine that he owns the Bank of England, but they all denote the same degree of insanity. The first will do nothing more than preach upon the street corners, the second may do nothing worse than squander his means, imagining that he has an inexhaustible mine upon which to draw after all has been spent. While the prisoner, whose delusion is that his wife is a prostitute, will commit homicide, and the same conclusion which would make the one brother a street preacher and the other a spendthrift, with their peculiar delusions, would make the prisoner a homicide with his. It would inevitably come sooner or later. The condition of the prisoner is somewhat remarkable: his delusion is clear and unmixed and runs completely through the texture of his mind, and yet his mind, on any matter disconnected with the subject of the delusion, is perfectly clear. The number of patients in the insane asylum with minds as clear as that of the prisoner is very few, but over three-fourths of the patients now under my charge have delusions less plainly marked and deep and less apparent in their manifestations than the delusion under which the prisoner is laboring. Mr. Frenchazel, to whom I have alluded, was afflicted with an insanity much like that of the prisoner; he was a man of more original intelligence and education; he bore an unblemished character; was accurate in his transactions of business; had acquired considerable wealth and had an accurate idea of the value of money and its relations to any article which he wished to sell or buy. He went insane from no known cause occurring at the time, but really from an hereditary disposition. An insane delusion that a wife was untrue, operating for years upon a nervous temperament, would sooner or later result in homicide. It might occur sooner or later, but it would eventually occur. The testimony I have heard in this case has confirmed the opinion I have expressed with reference to the prisoner. Homicides committed by insane persons are always marked by unusual atrocity and malignity. The action of the defendant is that of a man who feels justified in his own mind by the delusion which has taken possession of his faculties. A man who always has one fixed delusion when he becomes intoxicated, though it may never attend him when sober, may be regarded as insane and liable to deport himself as such at any moment. From my knowledge of insane persons

I could not be imposed upon in this case by stimulation or deception; this is a form of insanity which cannot be stimulated, unless the person attempting it is profoundly acquainted both with the subject of insanity and the arts of stimulation."

Here the court adjourned until 2 o'clock P. M., and at that hour reassembled and continued the examination of Dr. McFarland:

Cross-Examination.—"Delusions may be excited by stimulants, by ardent spirits, riding in the sun, or any other excitants, and there may be cases where the delusion is attributable to liquor. I am of the opinion that the prisoner's insanity is paroxysmal in its character, and is attended with an increased appetite for liquor. It is a well-known fact in asylums that in such paroxysms the subject has an increased desire for stimulants, and, unless they are given, he becomes worse. Dr. Allen gave me the first intimation I had of this case, gave me an outline of it, and asked what the probable expense would be of securing my attendance upon the trial. I made a calculation upon what my actual disbursements would be and replied accordingly. Fifty dollars is the sum I named; I deemed my time paid for by the people, and that I have no right to charge for that. Mr. McComas suggested to me that I had better not visit the prisoner alone. There is a difference between insanity and jealousy, but Othello's jealousy was carried beyond the bounds of reason. If the prisoner knew his act was wrong, though he may have committed it under an irresistible impulse, it is possible for him to have an idea of right and wrong in the abstract, and still in this particular act has been incapable of determining between right and wrong; in such case he should not be punished. If the prisoner had expressed any sincere regrets at the commission of the deed, I should regard it as an evidence that he knew it was wrong; taking measures to secrete the knife would be no indication of it. I do not think liquor alone induced the action or contributed to it; he would have done it quite as quickly sober or drunk. Liquor, by operating as an excitant for a term of years upon his constitution, may have brought him sooner into insanity, and in this way it may have contributed indirectly to bringing about the delusion under which he killed his wife, but, in causing the homicide at that particular time and place, it had but a secondary place, if one at all. He would have killed his wife any how; a homicide act is the natural result of such delusions. Had he been simply intoxicated at the time he would have ex-

pressed some contrition afterwards, and pride would not prevent him."

By the Court.—"Intellectual insanity is when the intellectual organs are affected, and consists in a disturbed state of thought with no particular moral misconceptions. The idea of moral insanity, in which the intellectual powers are not disturbed, is erroneous. There is usually more or less moral perversion with all cases of intellectual insanity. Liquor excites the passions, makes a person pugnacious or angry, but in the selection of objects upon which to vent itself it is indiscriminate and diffuse, as liable to select one as another, delusions is special, and any dislike springing from it attaches always to particular persons. There is no such fixedness in a drunken man. Liquor simply excites. A man laboring under a delusion may be impelled by an impulse which overthrows his will to do a deed he knows to be wrong."

Direct examination resumed.—"I heard some regrets from the prisoner myself, but they appeared to be of a general nature, such as regret that his wife had been untrue, regret that his life had been unhappy, regret at the grief into which his act had plunged his family, and regret that his wife's course had rendered necessary the commission of the deed. The act, as a righteous one, seemed ever to be justified in his mind. The condition of the pulse alone is of little importance, but when taken in connection with other facts becomes strong corroborative evidence."

P.S.—Since the above was in type, the trial has been brought to a close: and the jury returned a verdict of Guilty of Wilful Murder. The chief ground on which the jurors were induced to set aside the unanimous testimony of medical witnesses, was doubtless the belief that whatever mental impairment or derangement existed, had been the result of the long continued and inordinate use of intoxicating liquors. A motion has been made for a new trial.

AMERICAN MEDICAL ASSOCIATION.

"Since the commencement of the rebellion, with the exception of the American Medical Association, the medical societies, state and local, have exhibited commendable activity. They have all had their stated meetings, and the discussions have, in general, been unusually interesting. In our opinion, the National Association, the parent society, should have held its annual meeting, but the committee determined otherwise. The same reasons which then influenced them to adjourn the meeting another year, still exist, and in three-fold intensity."—*American Med. Times.*

The "reasons" that induced the Committee of Arrangements

to notify an adjournment of the annual meeting, were simply the earnest solicitations of officers and members of the association, in almost every section of the country. Of a score of letters received by the committee from officers and prominent members of the association located in Boston, New Haven, New York, Troy, Albany, Philadelphia, Cincinnati, and St. Louis, only two were in favor of holding the annual meeting last June. The Committee of Arrangements are ready to provide for the meeting whenever the profession will attend. Shall we have the meeting next June? Will our professional brethren give us their views on the subject without delay?

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE.—We have received the advance sheets of Volume I. of this Society, containing several valuable papers; and an abstract of the discussions elicited by them. We shall notice them more fully hereafter.

SICK AND WOUNDED IN WASHINGTON AND VICINITY.—There are at this date, 13,263 sick and wounded soldiers in the various hospitals in Washington, Georgetown, and Alexandria. In the hospitals at Frederiek there are 2,985, and at Hagerstown and Harper's Ferry about 3,000.—*Philadelphia Medical & Surgical Reporter*.

Surgeon J. V. Z. BLANEY, United States Volunteers, has been ordered to report to Gen. VIELE, at Norfolk, Va.

Ass't-Surgeon C. C. Dumreicher, U.S.A., has arrived at San Francisco, Cal., *en route* to Camp Pickett, San Juan Island.

PROVISION FOR TAKING CARE OF THE WOUNDED IN BATTLE.—During the present rebellion, much complaint has been made on account of inadequate provisions for promptly taking care of the wounded during and after a battle.

The following order, issued under the direction of Gen. McClellan, before he was removed from the command of the army of the Potomac, will show that no such complaints need be

made in future, if the order is obeyed with any degree of efficiency.

We also copy from the *Medical and Surgical Reporter*, the Surgeon-General's new bill of fare for hospitals :—

FIELD HOSPITALS IN THE ARMY OF THE POTOMAC.

C I R C U L A R.

HEADQUARTERS ARMY OF THE POTOMAC,
Medical Director's Office, October 30, 1862.

In order that the wounded may receive the most prompt and efficient attention during and after an engagement, and that the necessary operations may be performed by the most skilful and responsible surgeons at the earliest moment, the following instructions are issued for the guidance of the Medical Staff of this Army; and Medical Directors of Corps will see that they are promptly carried into effect:

Previous to an engagement there will be established in each Corps a Hospital for each Division, the position of which will be selected by the Medical Director of the Corps.

The organization of this Hospital will be as follows:

1st. A Surgeon in charge;

One Assistant-Surgeon to provide food, shelter, etc.;

One Assistant-Surgeon to keep the records, etc.

2d. Three Medical Officers to perform operations; three Medical Officers as Assistants to each of these Officers.

3d. Additional Medical Officers and Hospital Stewards and Nurses of the Division.

The Surgeon in charge will have general superintendence, and be responsible to the Surgeon-in-Chief of the Division for the proper administration of the Hospital.

The Surgeon-in-Chief of Division will detail one Assistant-Surgeon, who will report to, and be under the immediate orders of, the Surgeon in charge, and whose duties shall be to pitch the Hospital Tents and provide straw, fuel, water, blankets, etc.; and, when houses are used, to put them in proper order for the reception of wounded. This Assistant-Surgeon will, when this shall have been accomplished, at once organize a kitchen, using for this purpose the Hospital mess-chest and the kettles, tins, etc., in the ambulances. The supplies of beef stock and bread in the ambulances, and of arrow root, tea, etc., in the hospital wagon, will enable him to prepare quickly a sufficient

quantity of palatable and nourishing food. All the Cooks, and such of the Hospital Stewards and Nurses as may be necessary, will be placed under his orders for these purposes.

He will detail another Assistant-Surgeon, whose duty it shall be to keep a complete record of every case brought to the Hospital, giving the name, rank, company, and regiment, the seat and character of injury, the treatment, the operation if any be performed, and the result; which will be transmitted to the Medical Director of the Corps, and by him sent to this office.

This officer will also see to the proper interment of those who die, and that the grave be marked with a *head-board*, with the name, rank, company, and regiment, legibly inscribed thereon. He will make out two "tabular statements of wounded," which the Surgeon-in-Chief of Division will transmit within thirty-six hours after a battle; one to this office, (by a special messenger, if necessary), and the other to the Medical Director of the Corps to which the hospital belongs.

There will be selected from the Division by the Surgeon-in-Chief, under the direction of the Medical Director of the Corps, three medical officers, who will be the operating staff of the hospital, with whom will rest the immediate responsibility of the performance of all important operations. In all doubtful cases they will consult together, and a majority shall decide upon the expediency and character of the operation. These officers will be selected from the Division without regard to rank, but *solely* on account of their known prudence, judgement, and skill. The Surgeon-in-Chief of the Division is enjoined to be specially careful in the selection of these officers, choosing only those who have distinguished themselves for surgical skill, sound judgment, and conscientious regard for the highest interest of the wounded.

There will be detailed three medical officers to act as assistants to each one of these officers, who will report to him, and act entirely under his direction.

It is suggested that one of these assistants be selected to administer the anæsthetic. Each operating surgeon will be provided with an excellent table from the hospital wagon, and with the present organization for field hospitals, it is hoped that the confusion and the delay in performing the necessary operations so often existing after a battle, will be avoided, and all operations hereafter be *primary*.

The remaining medical officers of the division, except one to each regiment, will be ordered to the Hospital to act generally as assistants and dressers.

Those who follow regiments to the field will establish them-

selves, each one at a temporary depot, at such a distance or situation in the rear of his regiment, as will insure safety to the wounded, where they will give such aid as is immediately required; and they are here reminded, that whilst no personal consideration should interfere with their duty to the wounded, the grave responsibilities resting upon them render any unnecessary exposure improper.

The Surgeon-in-Chief of the Division will exercise general supervision, under the Medical Director of the Corps, over the medical affairs in his Division. He will see that the officers are faithful in the performance of their duties in the Hospital and upon the field; and that, by the Ambulance Corps, which has heretofore been so efficient, the wounded are removed from the field carefully and with despatch. Whenever his duties permit, he will give his professional services at the Hospital, and will order to the Hospital, as soon as located, all the Hospital wagons of the brigades, the Hospital tents and furniture, and all the Hospital stewards and nurses. He will notify the captain commanding the Ambulance Corps, or, if this be impracticable, the first lieutenant commanding the division ambulances, of the location of the Hospital.

No medical officer will leave the position to which he shall have been assigned without permission; and any officer so doing will be reported to the Medical Director of the Corps, who will report the facts to this office.

Medical Directors of Corps will apply to their Commanders on the eve of a battle for the necessary guard and men for fatigue duty. This guard will be particularly careful that no stragglers be allowed about the Hospital, using the food, etc., prepared for the wounded.

No wounded will be sent away from any of these Hospitals without authority from this office.

Previous to an engagement a detail will be made by Medical Directors of Corps of the proper number of medical officers, who will, should a retreat be found necessary, remain and take care of the wounded. This detail the Medical Directors will request Corps Commanders to announce in orders.

The skilful attention shown by medical officers of this army to the wounded upon the battle fields of South Mountain, Crampton's Gap, and the Antietam under trying circumstances, gives the assurance that, with this organization, the Medical Staff of the Army of the Potomac can with confidence be relied upon under all emergencies to take charge of the wounded entrusted to its care.

Blank form of Report to the Medical Director.

TABULAR STATEMENT of wounded in at the day of , 186

REGION OF BODY WOUNDED.	MISSILE.				AMPUTA- TIONS.		Other operations.	CHLORO- FORM.		TOTAL.
	Cannon Ball.	Shell.	Bullet.	Other.	Primary.	Secondary.		Given in.	Deaths from.	
Head,										
Neck,										
Chest,										
Abdomen,.....										
Back and spine,										
Hips and genitals,										
Shoulder,										
Arm,										
Forearm and hand,										
Thigh,.....										
Leg,.....										
Foot,										
OTHER OPERATIONS.										
TOTAL,.....										

This report will be sent to the Medical Director of the Army (by special messenger, when practicable) within thirty-six hours after a battle.

....., Surgeon,
JONA. LETTERMAN,
Surg. and Med. Director.

The Surgeon-General's New Bill of Fare for the Hospitals.—
The following diet table has been prepared by Surgeon-General Hammond, and the following order has been issued:—
“Medical officers who receive this Diet Table are directed to adopt it immediately in the hospitals under their charge, and to comply strictly and carefully with its provisions for thirty days, keeping during that period an accurate account of expenditure from the hospital fund. At the end of that time they will re-

port the results of this experimental trial, its effects upon the sick and upon the hospital fund, and will make such suggestions as they may deem appropriate, the object being to test the practical operation of the Diet Table, before adopting it as a standard for the General Hospitals. It is recommended that the diets be prepared according to receipts in the Steward's Manuel.

One Day Diet, Avoirdupois weight.—Full Diet.

Meat, oz.....16	Indian Meal, oz....1'60	Milk, oz.....8
Bread, oz.....18	Salt, gill.....0'16	Butter, oz.....1
Potatoes, oz..... 8	Coffee, oz.....0'80	Flour, oz.....0'25
Other vegetables, oz. 8	Tea, oz.....0'12	Molasses, gill.....0'32
Rice, Hominy, or	Sugar, oz.....2'40	Vinegar, gill.....0'32

Tuesday—in lieu of Fresh Meat.

Pork, oz..... 8	Beans, gill.....0'64
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Half Diet.

Meat, oz..... 8	Indian Meal, oz....1'60	Milk, oz.....8
Bread, oz.....16	Salt, gill.....0'16	Butter, oz.....1
Potatoes, oz..... 6	Coffee, oz.....0'80	Flour, oz.....0'25
Other vegetables, oz. 6	Tea, oz.....0'12	Molasses, gill.....0'32
Rice, Hominy, or	Sugar, oz.....2'40	Vinegar, gill.....0'32

Chicken Diet.

Fowl, oz.....12	Tea, oz.....0'24	Milk, oz..... 8
Bread, oz.....18	Sugar, oz.....2'40	Butter, oz..... 1
Salt, gill.....0'16		

Milk Diet.

Bread, oz.....14	Milk pt..... 3	Sugar, oz..... 1
Rice, oz..... 2		

Beef-Tea Diet.

Beef (without bone)	Salt, gill.....0'32	Sugar, oz..... 2
oz..... 8	Tea, oz.....0'24	Milk, oz..... 4
Bread, oz.....12		

Articles furnished on extra orders for special cases.

Fish.	Oranges.	Corn Starch.
Oysters, raw.	Lemons.	Tapioca.
Oysters, stewed.	Fruits.	Crackers.
Clam soup.	Ice.	Toast.
Vegetables, (special).	Barley-water.	Chocolate.
Milk.	Rice-water.	Cocoa.
Sugar, white.	Jelly-water.	Blanc Mange.
Sugar, brown.	Lemonade.	Wine Whey.
Barley.	Veal Cutlet.	Brandy.
Cracked Wheat.	Ham, boiled.	Whiskey.
Beef Steak.	Poultry.	Wine, Sherry.
Beef Essence.	Game.	"
Beef Extract.	Eggs.	Porter.
Mutton Chop.	Gruel, Corn Meal.	Ale.
Mutton Broth.	Gruel, Oat Meal.	Cider.
Wine Jelly.	Farina.	Milk Punch.
Custard.		

Low Diet.

Meat, oz..... 8	Sugar, oz..... 2.4	Rice, Farina, Corn
Bread, oz..... 14	Milk, oz..... 8	Starch, or Bread
Salt, gill..... 0.16	Butter, oz..... 1	made into Pud-
Tea, oz..... 0.240		ding, oz..... 2

Daily Meals—Full Diet—Sunday.—Breakfast.

Coffee, pt..... 1	Butter, oz..... $\frac{1}{2}$	Molasses, gill..... 0.32
Bread, oz..... 6	Hominy, boiled, oz... 2	

Dinner.

Roast Beef, oz..... 16	Other vegetables, oz. 8	Rice Pudding.....
Potatoes, oz..... 8	Bread, oz..... 6	

Supper.

Tea, pt..... 1	Bread or crackers, oz..... 6	Cheese, oz..... 3
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Monday.—Breakfast.

Coffee, pt..... 1	Butter, oz..... $\frac{1}{2}$	Cold Meat, oz..... 4
Bread, oz..... 6		

Dinner.

Beef Soup, pt..... 1 $\frac{1}{2}$	Bread, oz..... 6	Other vegetables, oz. 8
Beef Soup Meat, oz. 12	Potatoes, oz..... 8	

Tea.

Tea, pt..... 1	Bread, oz..... 6	Butter, oz..... $\frac{1}{2}$
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Tuesday.—Breakfast.

Coffee, pt..... 1	Butter, oz..... $\frac{1}{2}$	Meat Hash with
Bread, oz..... 6		Vegetables, oz..... 8

Dinner.

Pork } Baked, oz... 8	Potatoes, oz..... 8	Bread, oz..... 6
Beans } or in Soup, gill..... 0.64	Other vegetables, oz. 8	Indian Pudding.

Tea.

Tea, pt..... 1	Butter, oz..... $\frac{1}{2}$	Fruit, stewed, oz..... 4
Bread, oz..... 6		

Wednesday.—Breakfast.

Coffee, pt..... 1	Butter, oz..... $\frac{1}{2}$	oz..... 2
Bread, oz..... 6	Indian Meal, boiled	Molasses, gill..... 0.32

Dinner.

Beef recently corned, or Ham boiled, oz. 16	Potatoes, oz..... 8	Bread, oz..... 6
	Other vegetables, oz. 8	Pickles, oz..... 1

Tea.

Tea, pt..... 1	Bread, oz..... 6	Butter, oz..... $\frac{1}{2}$
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The above will serve as a sample of the full diet table, and the following of the

Half Diet.—Sunday.—Breakfast.

Coffee, pt..... 1	Butter, oz..... $\frac{1}{2}$	oz..... 2
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Bread, oz..... 6	Indian Meal, boiled,	Molasses, gill.....0.32
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Dinner.

Beef Broth, pt..... 1	Bread, oz..... 4	Other vegetables, oz. 6
Beef Broth Meat, oz. 8	Potatoes, oz..... 6	Rice Pudding.

Tea.

Tea, pt..... 1	Bread, oz..... 6	Butter, oz..... ½
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Monday.—Breakfast.

Coffee, pt..... 1	Bread, oz..... 6	Butter, oz..... ½
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Dinner.

Beef Soup, pt..... 1	Bread, oz..... 4	Other vegetables, oz. 6
Beef Soup Meat, oz... 8	Potatoes, oz..... 6	

Tea.

Tea, pt..... 1	Bread, oz..... 6	Butter, oz..... ½
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Tuesday.—Breakfast.

Coffee, pt..... 1	Butter, oz..... ½	Molasses, gill.....0.32
Bread, oz..... 6	Hominy, boiled, oz... 2	

Dinner.

Mutton or Beef Broth pt..... 1	| Bread, oz..... 4	| Other vegetables, oz. 6
Mutton or Meat, oz.. 8	Potatoes, oz..... 6	Indian Pudding.

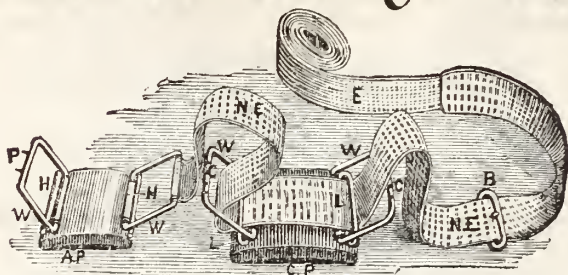
Tea.

Tea, pt..... 1	Bread, oz..... 6	Butter, oz..... ½
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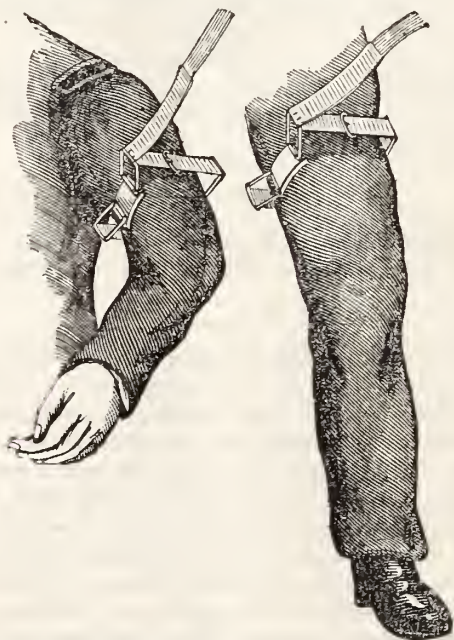
There are also "Beef-tea diet," "Chicken diet," "Low diet," and "Milk diet," tables, which we cannot copy for want of space.

SPERMATORRHŒA.—Dr. Lafont-Gouzi publishes in the *Journal de Medecine et Chirurgie* the results of a careful clinical inquiry into the effects of some medicinal agents, represented as special sedatives of sexual erethism, with a view of discovering some means of allaying genital excitement and consequent spermatorrhœa. He thinks cauterization has been too highly extolled, though doubtless applicable and efficacious in rebellious cases; but in most instances the spermatorrhœa, being the result of a too morbid energy of the organs of generation, should be treated by measures less capable of inflicting injury. He found digitaline and luguline alike inefficacious, but was more successful with the bromide of potassium, two-thirds of his cases being either cured or greatly relieved by from 15 to 30 grains being administered in two doses every afternoon for a fortnight. —*Dublin Medical Press; American Med. Times.*

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Original Contributions.

ARTICLE XXXIX.

SILVER MIXTURE AND NERVOUS SEDATIVES.

By IRA HATCH, M.D.

Read before the Chicago Medical Society, November 14th, 1862.

The iodide of potassium unites with the nitrate of silver in the proportions of 41 of the former, to 43 of the latter, when dissolved in pure water.

The iodide of silver is precipitated in the form of beautiful pale yellow crystals, leaving the nitrate of potassa in solution. By adding more of the iodide of potassium, the precipitate becomes white, and is a per iodide of silver. The utmost extent to which the iodide of potassium will unite with the nitrate of silver I have not ascertained. It is evident that it unites in different proportions. My formula is as follows:—

R $\bar{y}$. Argenti Nitratis,grs. xvi.
Potassii Iodide, " xxiv.
Aque Destillatæ, $\bar{5}$ iv.

Misce. Dose:—One teaspoonful three times per day, after eating.—Shake well.

When unwashed, this mixture contains the iodide of silver in the form of a precipitate, and the nitrate of potassa in solution, and, possibly, a small proportion of the iodide of potassium un-

combined. In very sensitive stomachs, this mixture may possibly produce slight disturbance: if so, pour off the fluid from the precipitate, and fill up the phial with pure water. If you wish to wash the precipitate, dissolve 16 grs. iod. potass. in an ounce of water, then add of the nit. silver till a dense yellow precipitate appears; let it settle, pour off the water, and add 4 oz. pure water, and 8 grs. iod. potass. This will seldom be necessary, as the quantity of nit. potass. in solution is inconsiderable. It will very seldom disturb the stomach.

When thus prepared, I have never known it disturb the stomach of the most delicate woman or child.

To those who are in the habit of using the nitrate of silver internally, I would recommend the use of this mixture in its place; I believe it to be a sedative, allaying irritation of the mucous membranes. In all cases where the caustic properties of the nitrate are objectionable, this preparation possesses important advantages. By many physicians, the sedative properties of the nitrate of silver are supposed to depend upon its causticity. This is undoubtedly a mistake. The sedative properties of the oxide have long been known and admitted. It is now pretty generally understood that the non-caustic preparations of silver act equally as sedatives with the nitrate.

This being admitted, we can conceive of but few cases where it would be advisable to introduce a caustic into the stomach. I am satisfied that many stomachs will not tolerate it for any great length of time. The silver mixture of which I am speaking, may be given with impunity for any length of time. As a sedative it is equal, and as an alterative it is far superior to the nitrate.

It combines the most valuable properties of both the silver and the iodine in a form which the most delicate stomach will always tolerate. It is particularly adapted to those gastric affections which are attended with increased sensibility and increased secretion.

There can be no doubt that certain medicines act upon certain membranes.

The particular surfaces upon which the preparations of silver

act, besides the mucous membranes of the alimentary canal, are the mucous membranes of the organs of generation.

It is also equally clear, that the glands in the vicinity of an inflamed or diseased mucous membrane are often, perhaps we may say generally, affected either by sympathy, or by the absorption of impure secretions.

The swelling of the inguinal glands and testicles in gonorrhœa, and of the submaxillary and parotid glands in scarlatina and diphtheria, &c., are familiar examples.

If then we can combine in a single medicine a powerful sedative influence upon the mucous surface itself, together with an active alterative influence upon the glands, we have a valuable remedy. These powers are contained in this combination of silver and iodine, to a considerable extent. It is not liable to decomposition, or loss of strength, has no disagreeable taste, and never disturbs the stomach. It may be given in liberal doses, and continued for a longer time than any other preparation of either silver or iodine. Many delicate females, who are afflicted with leucorrhœa, will not tolerate the nitrate. These patients generally have sensitive, irritable, inflamed stomachs.

The caustic properties of the nitrate, when it is given in efficient doses, always aggravate the gastric affection, and cannot be continued long enough to benefit the patient. But this mixture, while it relieves the uterine irritation, removes the gastric disturbance. In gastralgia and pyrosis, accompanied with pain in the stomach, nausea, and vomiting of a thin transparent fluid, intensely acid, attended often with extreme thirst; the silver mixture is a valuable remedy.

In these cases, alkalies and absorbents, bismuth, &c., afford only a temporary relief. Delicate females, tormented at the same time with gastric and uterine irritation, with vomiting, loathing of food, sour eructations, constipation, flatulency, pain in the side and back, and leucorrhœa may always be encouraged to expect relief by this remedy. This medicine is equally efficacious in idiopathic gastric irritation, whether in males or females, adults or children.

In cases of extreme nervous debility, some bitter tonic should

be added. With me the *hydrastis canadensis* is a favorite article. The best mode of preparation is infusion of the root in cold water. The bitter acts directly upon the mucous membranes, not only of the mouth and throat, but also of the stomach, the urethra, and the merns.

I have never seen a case of nursing sore mouth that would not yield to the action of the silver mixture and the *hydrastis*; the medical properties of the *hydrastis* deserve further notice. I do not pretend to say that this combination of sedative, alterative, and tonic, all exerting a specific influence upon the mucous membranes, is better than any other combination of remedies. But this I will say: that in the experience of their use for fifteen years, they have seldom disappointed my expectations. All ordinary cases of simple leucorrhœa without ulceration, will yield to their use; and leucorrhœa, with non-malignant ulceration, with the application of some tonic astringent powder to the ulcerated surface, dry, will yield to these remedies much sooner, and with far less trouble to the patient, than by the application of caustics. The pulverized gum catechu, is one of the best preparations; it may be applied by moistening a sponge, and dipping it in the dry powder, and pressing it directly upon the diseased surface. Dry calomel is also a good application to be used occasionally.

The application of caustics to the neck of the uterus for simple abrasions of the mucous surface, I believe to be unnecessary and barbarous. The beneficial effects of the silver mixture may be owing in part, perhaps, to its alterative and tonic properties; but I think it is mainly due to its sedative influence "determined" to the mucous surfaces.

It seems to be no longer a question whether we have *arterial sedatives*, the primary action of which is upon the pulsations of the heart, enabling the practitioner to control the pulse without wasting the vital powers.

Certain articles have long been known to possess these powers, yet the most efficient remedies were not fully understood. The introduction of the *veratrum viride* into general use as an arterial sedative forms an important epoch in the history of medicine,

inasmuch as it has revolutionized practice in inflammatory diseases.

We need *nervous sedatives*, to act directly upon the periphery of the sentient nerves. We have some such remedies, but the fact seems hardly to be recognized by the profession. A good deal of attention has of late years been paid to reflex action. In proportion as these investigations progress, will the demand for these sedatives increase. A multitude of morbid actions owe their origin to irritation of the mucous surfaces, which irritation is communicated to distant parts of the system through the medium of the nerves. I have had some personal experience, for the last few weeks, upon this subject. Some weeks ago I had a severe attack of diarrhœa: in fact, it might with more propriety be called cholera, supervening upon chronic diarrhœa. The extremities were cold, the pulse had disappeared at the wrist, the vomiting and spasms of the muscles of the extremities were most distressing, and a fatal collapse was seriously apprehended. During convalescence I was troubled for a long time with numbness of the feet and legs, and had a sense of insecurity when walking; it required all my resolution to venture up and down stairs. This partial anesthesia was accompanied by a strange sensation in the back and limbs, and a constant fear of convulsions. These sensations wore off gradually; but they return whenever the diarrhœa returns; as it has several times since my sickness.

I have no doubt that a large share of the convulsive diseases have their origin in the irritation of mucous surfaces, especially among children. The convulsions arising from bowel-complaints, from worms, and from indigestion, as well as from the eruptive fevers, when the eruption is too long coming to the surface, and the force of the disease is spent upon the mucous membranes, are familiar examples. Now, what we want in these cases is a sedative, "determined to," and acting upon the primary points of irritation.

We are obliged to use narcoties, and thus partially suspend the functions of the brain and nervous centres, in order to allay the irritation at their extremities. Recently some physicians

have substituted arterial sedatives for narcotics, it is said, with extraordinary success. Dr. NORWOOD strongly recommends the *viratrum viride* in convulsions. This is a movement in the right direction, and it is to be hoped will lead to the discovery of direct nervous sedatives. This is a subject that should engage the attention of the profession. These remedies should be sought for. No doubt there may be found those that will as effectually control the irritations of the mucous membranes, and thereby allay the sympathetic irritation of the brain and nervous centres, as our arterial sedatives now control the undue action of the heart and arteries; an operation but little understood a few years ago. As yet but little attention has been paid to this subject. I know of but one writer on *materia medica* that has attempted to classify these medicines. Those articles that are now in use, are weak and slow in their operation, and the power is hardly recognized by the profession. But no doubt there is such a power. If, "to be able to control *vascular* excitement, whenever it occurs, either when it is a curative effort of nature, passing salutary bounds, or itself a diseased action, be a most valuable acquisition," certainly it can be no less so to be able to control *nervous* excitement. Mercurv is a nervous sedative in the sense in which I use the term.

No one can doubt that it possesses this power, who has watched its effects in small doses, in cholera infantum, or in larger doses, in cases of convulsions in children. Its effect is often so prompt and immediate that we can hardly attribute it to any other power but that of a direct sedative. The different preparations of silver possess this power to a considerable extent. This is well understood by surgeons, when they use it topically in irritable mucous membranes, as the eye, the urethra, &c. In certain irritable stomachs, this power is well marked; it not only acts as a direct sedative upon the mucous membrane of the alimentary canal, but upon the mucous membranes of the urinary organs, and the organs of generation.

Lead is a well-known nervous sedative, whether used as a local or as a constitutional remedy. Zinc possesses the same power, and through this power cures epilepsy and chorea, depending upon irritation of the extremities of the nerves.

Muriate of ammonia, iodide of potassium, chlorate of potassa, alum, bismuth, &c., all possess this same power; some operating upon one set of membranes, and others upon another set of membranes. Whether any combination of these medicines, or of others not mentioned, would increase the effect, is a question worthy of consideration.

I am satisfied that the iodide of silver is a more active nervous sedative than either silver or iodine separately. This leads me to conclude that other combinations may be found far more active than any yet discovered. And we have reason to hope that a remedy will yet be found to control the irritation of every distinct mucous membrane in the body. We have stimulants and alteratives that act directly upon certain membranes.

No one can doubt that copaiba, cubeb, buchu, gallium, aperine, *hydrastis canadensis*, *uva ursi*, *matéo*, and other articles act directly upon the mucous membranes of the urinary organs. And no one can doubt that the power of these articles is increased by combination. The best preparation I have seen, is by Mr. WILLARD, a druggist in this city, prepared in the shape of lozenges, under the name of French Tablets.

We have other tonics and stimulants that act upon the mucous membranes of the respiratory passages, as the squill, &c., and others still upon the mucous membranes of the alimentary canal. All these are well understood. But in sedatives to allay irritation of the nervous extremities, without disturbing the functions of the brain and nervous centres, we are deficient. *Hic labor hoc opus est.*

ARTICLE XL.

PLACENTA PRÆVIA.

BY DR. R. B. TREAT, of Janesville, Wis.

It having been my ill-fortune to be called to attend two cases of Placenta Prævia, within the past two months; and, having pursued a different plan in the treatment of them than I have formerly done, I have thought proper to report them for publication.

CASE 1.—Mrs. Craven, aged about 35 years, of a vigorous constitution, and the mother of several children. She was at full time, and labor commenced in the morning, having previously had several attacks of hemorrhage, as she informed me. She had been under the care of an Irish midwife, rough and ignorant; and the flooding gradually increased as the os uteri became dilated, until evening, when it became so excessive that syncope ensued, and I was sent for in haste. I lost no time in getting to the patient; found that she had rallied somewhat, but the pulse was still small, feeble, and rapid. There was but little prospect of saving the woman's life, let the case be what it might.

I immediately made an examination per vagina, and found the placenta presenting. The vagina was filled with coagula. The os was well dilated; and I restrained the hemorrhage by introducing the hand, until I could prepare some ergot. I also sent for Dr. E. F. DODGE to assist me. I then gave freely of the ergot, and carefully perforated the placenta in the centre, passed my hand to the fundus of the uterus, ruptured the membranes, secured the feet of the child, brought them down and delivered through the opening in it. Dr. DODGE made steady and firm pressure over the uterus, at the same time following it down as the child was expelled. The placenta came away immediately, and the flooding ceased. The uterus contracted well, from the pressure and ergot administered; and no further hemorrhage occurred during her recovery. In fact, very little blood was lost during the time intervening, from my arrival and the delivery. A firm bandage with compress was neatly applied, and a nourishing diet ordered; she was also directed to remain quietly in bed for a few days. Her recovery was rapid and perfect.

CASE 2.—Mrs. B. a young married woman, aged 26, with feeble constitution. She was six months' advanced, and had been under the care of Dr. DODGE some four weeks. The hemorrhage was quite excessive at times, as she informed me; but as the os uteri was undilated, and her strength good, the usual remedies for uterine hemorrhage were resorted to, which

controlled it for the time being. Finally, at the end of the sixth month, labor pains came on: the os yielded, and the flooding became so profuse, that it was necessary to interfere to save the life of the mother. An examination confirmed Dr. DODGE's previous diagnosis. As in the other case, the placenta was located centrally over the os.

Chloroform and ether was administered, and when fully under its influence, I proceeded slowly and carefully to dilate the vagina; which after a while was accomplished. Then inserting my fingers in the usual way into the os, gradually dilated it, and introduced my hand, perforated the placenta as in the previous case, ruptured the membranes high up, secured the feet and delivered by turning as before through the placenta; which immediately followed the delivery of the child. No flooding took place after the introduction of the hand, and she soon rallied from the operation, with much less prostration than usual in such cases; attributable, I concluded, to the use of the anesthetic. In this case peritoneal inflammation followed which was successfully combated by Dr. DODGE; who treated the case afterwards. She made a good recovery. In both of these cases the children were lost; owing in the one case to the premature labor, and in the other from so large a portion of the placenta having been so long detached. It is perhaps necessary to add that my hand and arm were well oiled, previous to its introduction, or that the operation should not be undertaken without the use of chloroform.

In reporting these cases for publication, it is with a desire to call the attention of the profession to the ease and rapidity by which delivery may be accomplished by this mode of procedure; as well as to add my testimony to the revival of a method so pertinaciously urged and opposed by the earlier authors—on obstetric practice. It has been my fortune to have four cases of complete, and six partial placental presentations. Of the four complete, delivery was accomplished in two of them by detaching the placenta at the side, a method by far more tedious and dangerous in my estimation. One of the cases died a few minutes after delivery, from the fact that the attending

physician used the tampon without the knowledge of the presentation; and leaving it until a fatal hemorrhage had taken place, before I was called. In the other case, I saved both mother and child, but the recovery was long delayed. Of the other class of cases, the labor was completed in three by rupturing the membranes, and bringing the head down by the placental mass; and the other three by turning,—all successful. When the practitioner is so unfortunate as to meet a case of this kind, he is in duty bound to watch it with the most untiring solicitude, and never resort to the tampon, unless to give time to send for counsel, (which should always be had, if possible,) and not then, if he possesses the requisite knowledge, and courage to proceed with an operation that requires so much skill and perseverance, to save the life of a patient placed in so much jeopardy by one of the worst complications to be met with in obstetric practice.

ARTICLE XLI.

A FATAL CASE OF URÆMIA.

Reported by ADDISON NILES, M.D., Quincy, Ill.

Ediom Hurd, aged twenty-four years, a soldier, brought from Pittsburgh Landing to Quincy, May 12th, 1862.

From the history obtained, it appears that he suffered from diarrhœa for two weeks previous, and that his case was reported as typhoid fever.

He was greatly prostrated: the tongue brown and dry, pulse feeble with no ferbile excitement; vomiting and purging of a dark green fluid, occurred several times during the twenty-four hours; respiration and the intellectual functions undisturbed. He had no appetite for food, and complained of fulness of the stomach. A large bed-sore was found over the sacrum, and smaller ones on each of the hips. A nutritious diet, and a supporting plan of treatment, including per sulphate of iron and quinine were advised; under which, the tongue became moist

and clean, and the diarrhœa considerably diminished, and the strength improved.

The first of June, a swelling appeared below and in the front of the left ear, and patches of diphtheritic membrane were observed in the mouth, with soreness of the throat and cough; the swelling disappeared by suppuration.

The urine was now examined, and found abuminous, specific gravity 1.010. By the microscope, blood disks, granular epithelial casts, and renal epithelium were observed. The blood disks increased until his death, before which time the fluid assumed a red appearance. Three days before his death, the vomiting and purging ceased, and the diphtheritic patches disappeared under a lotion of nitrate of silver. From this time he began to sleep, at first he could be aroused, but the drowsiness increased, and profound coma followed, with occasional convulsions; death occurred June 25th.

In the afternoon of the same day, an examination was made by Drs. ROBBINS and CHURCHMAN, practitioners of this city, and graduates of Jefferson Medical College, and myself. The mucous membranes of the stomach and bowels was inspected in every part. The surface was pale generally, and anemic, and the membrane sound and normal, excepting a portion of the colon, in which the follicles were enlarged, the surface appearing as though fine sand had been sprinkled over it. The peritoneum, lungs, heart, and liver and spleen appeared normal. An old adhesion was found between the two surfaces of the pleura on the left side. One ounce of serum was taken from the pericardium, and four ounces from within the cranium, chiefly from the ventricles of the brain, which otherwise appeared healthy. The right kidney was much engorged, and the left had a cyst developed in it.

From the fluid in the brain twenty-five grains of urea were precipitated by nitrate of mercury, after the process of LIEBIG. The kidneys were examined by the microscope, and the convoluted tubes found generally diseased. Some portions were stripped of their epithelial lining, and in some, small cells were developed in its place; others were filled with blood disks and

fragments of epithelium. The immediate cause of death, doubtless, was the effusion in the brain, obstructing its action. This resulted from the urea, and, probably, other renal matters retained in the blood, in consequence of the failure of the kidney from disease to eliminate them.

It is worthy of remark that so long as the vomiting and purging continued, the head did not suffer. Prof. HAMMOND has shown by injecting urea into the veins of dogs deprived of kidneys, that vomiting and purging prolonged life by expelling the poison. The *post mortem* appearances resemble those found by Dr. ALONZO J. PHELPS in the camp near Corinth. By his report in the August number of the *American Medical Monthly*, it does not appear that the kidney or its secretion was examined by the microscope. The doctor justly concludes that the disease "is not dothineritis," or typhoid fever proper.

ARTICLE XLII.

TWO CASES OF FRACTURE OF THE SKULL.

By HIRAM WANZER, M.D., Chicago, Ill.

CASE 1.—Miss S., aged 22 years, of good constitution, was thrown from a carriage, receiving a compound comminuted fracture of the anterior inferior angle of the right parietal bone, over an area of about two inches; the pieces were depressed, so that their outer surfaces corresponded with the inner edge of the undepressed bone. The dura mater was entire. The patient was comatose, and suffering from shock. Upon removing the depressed bones, eight hours after the injury, consciousness was restored, and reaction began. Not fifteen minutes afterward, she was again comatose; and upon examination, the dura mater was found to be bulging outwards; and that protrusion steadily increased, till the membrane was slightly above the level of the cranium.

In accordance with what seems to be the weight of surgical authority, no effort was made to evacuate the extravasated fluid.

Death occurred twenty-four hours after the injury. The effusion under the membranes seemed to occur as a consequence of the removal of the pieces of bone which may have acted as a compress upon a wounded artery. Possibly, the patient might have been benefitted by incision of the dura mater; had this practice been followed, ligation of the external carotid might have been justifiable; seeing that death was threatened by hemorrhage, *probably* from laceration of the middle meningeal artery within the arachnoid sac.

CASE 2.—Charles C., aged 30, in February, '62, fell from the top of a freight car, striking upon the right side of the head. The body was cold, the pulse nearly imperceptible; there was coma and general paralysis. Blood was vomited continually, and in considerable quantities. Several drops of blood had run from the right ear, and at each effort at emesis a few drops were ejected from the meatus. There was no oozing of serous fluid. The usual restorative measures were used, and in about three hours reaction was established, and consciousness and motion restored. In all respects the case progressed favorably for one week: at the expiration of this time, decided symptoms of encephalitis set in. Bleeding to syncope, at once, and completely, removed this danger. The next week, there was paralysis of the muscles of the right side of the face; this symptom, coming on gradually, disappeared in a few days, leaving no evidence of the injury, excepting serious deafness in the right ear, with a sense of prickling in the meatus, and tenderness of the concha. The getting of blood from the ear, I am disposed to attribute to the congestion of the cranial cavity, occasioned by the act of vomiting. There was, probably, fracture of the petrous portion of the temporal bone, involving the membrana tympani, and more or less immediately the portio dura.

The source of the blood thrown from the stomach is a matter for conjecture.

ARTICLE XLIII.

PRACTICE OF MEDICINE AND SURGERY IN
MODERN TIMES; SINS AND DELINQUENCIES OF
PROFESSIONAL MEN.

Practicing medicine and surgery in these modern days, is not calculated to make the physician pleasant and agreeable under all circumstances. The excitement incident to the condition of the government at this time;—the general deterioration as regards the moral honesty of mankind in the various departments of life;—the frequent solicitations on the part of that portion of community whose duty it is to replenish the earth, for medicine or means to sacrifice the delicate germ of embryotic life, (a crime of great magnitude, and rapidly on the increase: confined to no one class of society; the aristocratic, those who pine in want and penury, those within the pale of modern Christianity, as well as those who never felt the invigorating influence of a true religion: all, all are alike guilty of the heinous and unwarranted sin against the beautiful and benificent laws of nature, and of nature's God.) The many cares and anxious thoughts attending the arduous duties of the profession—the misery one is compelled to witness in the daily rounds—the want of appreciation of services manifested by many, and upon too many occasions; are all calculated to blunt the finer sensibilities of human nature, and change the character to such a degree that soon man is lost in the mere automaton. The profession is filled to overflowing; and envy and jealousies arise among practitioners, which feeling is fostered and cherished to such an extent that the people wonder why the profession tolerates it, and enquire if there is any honesty or nobleness of soul within the pale of the medical profession. So many and varied are the obstacles met with in the life and duties of the physician, therefore, that I conclude that he who can live in accordance with the ten commandments while pursuing his vocation, is made of sterner Christian material than the average of mankind. If such there be in the profession, they are en-

titled to a free-ticket to the realms of the future world, and may well and truly, "Thank God that they are not as other men are."

With the best of intentions as regards the profession and mankind in general, and with the idea (perhaps a vain one,) that the medical practitioner may be benefitted morally and professionally by a faithful and truthful portrayal of the many obstacles met with in practice, combined with the exposition of the sins and medical delinquencies of some medical men in every locality. I have ventured out in a new and untried field of labor.

As your numerous readers may enquire who I am, and desire to know upon what basis I stand and essay to the world an article on the *morale* of the profession; I shall only say, that I consider myself an old practitioner, although my head is not yet silvered with the rapid exit of "many years." And I console myself with the idea that I have, by reading and observation, acquired some knowledge of medical science, as well as become a proficient in judging of human character as found in sickness and health. I may also, perhaps, be characterized as a "medical heretic," as I belong to no pathy or ism, and never have, although a graduate of a respectable medical college. Consider me then, kind reader, an outsider, gathering knowledge from all available sources, and storing the mind with all useful material (gleaned from books and observation,) for the successful treatment of disease in all its varied forms. It has been my province to observe closely the effects of nature, to admire her successful efforts in restoring the human system to healthy action, when invaded by disease, and to select remedies to aid, rather than to direct or go before her. And he who sits quietly by, carefully noting her restorative powers in disease, or where accident or the surgeon's knife has produced serious and extensive wound of muscle and bone, and does not conclude that his skill is nothing in comparison to that of the *vis medicatrix nature*, must be possessed of an organ of self-esteem that would set at defiance the will of the Almighty, or attempt to thwart the wicked designs of the devil.

But many there are, and of every pathy and ism, (mere pretenders, however,) who boastfully proclaim upon all occasions wonderful cures, for the purpose of gaining notoriety, and to increase their business. One will notice that this class of men will have any number of patients with heart disease, or phthisis pulmonalis, who recover in a few weeks under their treatment, and then go about proclaiming the surprising skill of the doctor. I have in my mind's eye numerous cases that have been diagnosed as organic diseases of the heart, which have been removed by attention to the digestive organs and moderate exercise, after being under the care of these deceitful practitioners for many months. Others make surgery their hobby, and though ignoring the first principle of the science, and devoid morally of every element that goes to make the man and true surgeon, are ever ready to sacrifice the patient to gain the eclat of the public, as operators. So great is this desire in the brain of many, that I have known preparations made and the operations commenced for the removal of what had been diagnosed as fatty tumors of the thigh and other parts, when the history of the case, and every appearance of the patient indicated the correct character of the disease. A few strokes of the knife, making deep and extensive wounds, discovers to the vision of the operators large abscesses. But with this class of men, such glaring demonstration of ignorance does not deter them from still boasting of their surgical skill; still continuing to deceive the public, and subjecting their followers to pain and suffering—all for name and notoriety. Can such men be true physicians and surgeons? Should they be tolerated by the medical profession, or their sins and medical delinquencies be passed over in silence? Alas, it is too often the case, but the welfare and progress of medical science and surgery forbid it. The welfare of the public, whose guardian the true physician is, demands this exposure, and it is a shameful neglect of duty not to do it.

To illustrate more pointedly the course of such professional men, I will suppose a case, which, if it should meet the eye of some, may bring to their minds patients sacrificed by their own practice, so similar in every respect as to lead them to conclude

that it was "an o'er true tale." Having been requested to assist in the removal of a tumor on the upper part of the thigh of a young lady, I consented. On visiting the patient I found her one of those frail objects of humanity whom the Almighty had visited upon, to an alarming extent, the curse of scrofula.

The pale physiognomy, the blue veins coursing over the pallid marble-like forehead, the flabby muscular tissue, the sharp, full blue eye, the long eyelashes, the whitened blue skin, with several extensive cicatrices about the neck and joints, told but too plainly that death had secured another victim: it being only a matter of time when she would be called to that higher, and we trust a better world. Upon examining the tumor, its elastic feel, the colorless surface and the fluctuation, gave unmistakable evidence of the true character of it. My opinion not being solicited, it was not given, (having long since learned not to volunteer advice;) and the patient was prepared for the operation; chloroform administered, and my position assigned. The operator now enquired what kind of an incision he should make. I simply replied, "that an elliptical one would be proper for a fatty tumor of such a size in that location." The incisions were accordingly made six or eight inches in length, the dissection commenced, when, for the first time, the idea seemed to flash across the vision of the operator that the *fatty tumor had degenerated into an abscess*, and he incontinently exclaimed, "I do not know what we have got here." That was evident thought I, and loudly replied, "you will find out when the scalpel penetrates the abscess;" which it did the very next stroke. The pus poured suddenly forth in large quantities, and the astonished operator became nervous, and suggested that the wound be closed. I suggested that as the operation had proceeded so far, it would be well to evacuate the sac and dissect as much of it as could safely be done. My advice was followed, and the wound dressed. In explaining to the family he remarked, "that it was the first time he ever saw a fatty tumor degenerate into a scrofulous abscess." I replied, "that this one had done so very suddenly, as but a few minutes had elapsed since he had made his diagnosis." No further explan-

ation was attempted, and I retired satisfied that the boastful operator's science and skill had signally failed in this case, as in many other instances perhaps, and he welcome to all the credit to be obtained under such circumstances. The readers may conclude that the imagination has largely supplied some of the immaterial portions of the above case; but let them look back over the practice of long years, and if they do not call to mind similar cases occurring in their own locality, they may deem themselves fortunate in having for their associates men of sterling worth, and free from the sins that are generated in the hearts and heads of too many professional men. But, nevertheless, I assure each and every one that there is more truth than poetry in the story.

I have mused over the strange conduct of this class of professional men, watched their erratic professional course through life, marked by ignorance and deceit, and contrasted it with the quiet unassuming manner of the really scientific and true physician and surgeon, and wondered why there should be such a difference in mankind. Doubting at the same time whether professional men of this character had human souls, or ever thought of reaching a future world, prepared to enjoy the happiness and glory allotted to the true physician, who is governed by principle in the social and professional circle, and acts in accordance with the requirements of the established code of medical ethics.

M.

OVARIOTOMY may be truly said to be the operation on the order of the day. Mr. S. Wells, on showing some ovarian tumors at the Pathological Society, remarked that "although last session he reported 12 cases with 7 deaths, he could now say that, reckoning the above recent cases, the last 9 were successful operations." On the 15th Oct., Mr. Bryant removed a large ovarian cyst from a woman in Guy's Hospital. The patient has, we understand, gone on well to a recovery, no bad symptoms having appeared. Another operation of this nature has been performed at St. Bartholomew's, and one some few weeks ago at St. George's Hospital. In France, also, in all quarters, ovariologists are springing up.—*Brit. Med. Jour.*

Selections.

EXPERIMENTAL RESEARCHES INTO A NEW EXCRETORY FUNCTION OF THE LIVER, &c.

BY AUSTIN FLINT, JR., M.D., Professor of Physiology and Microscopy
in the Bellevue Medical College, New York; &c.

(Continued from page 697.)

STERCORINE.

The stercorine has already been referred to and delineated in the analyses of various specimens of blood for cholesterine. It was discovered by Boudet, and described by him under the name of seroline, in an article published in the *Annales de Chimie et de Physique*, in 1833, as a principle found in the serum of the blood. Up to the present time, this is the only situation in which it has been found, and here in such an excessively minute quantity that enough has never been obtained for ultimate chemical analysis. With regard to its function nothing whatever has been known. Robin thus speaks of it: "*On ne sait pas comment se forme la seroline, ni quel est son rôle physiologique.*"*

Chemical characters.—This substance, like cholesterine is a non-saponifiable fat. It has never been obtained in sufficient quantity for ultimate chemical analysis; but as in its decomposition it disengages a little ammonia, it is supposed by Verdeil and Marcet to contain nitrogen.† The evidences of this ingredient are very slight, and its existence is doubtful. It is neutral, inodorous, insoluble in water, soluble in ether, very soluble in hot alcohol, but almost insoluble in cold. It is not attacked by the caustic alkalies, even after prolonged boiling. When treated with strong sulphuric acid it strikes a red color, similar to that produced by the sulphuric acid and cholesterine. According to Lehmann it melts at 96° 8' Fahr., and on the application of strong heat may be distilled without change. Boudet extracted it from the serum of the blood, by evaporating it, boiling the residue with water, and evaporating again, taking up the residue with boiling alcohol, which deposited the crystals on cooling.

Form of its crystals.—Boudet describes the crystals thus obtained as filaments, with varicosities here and there, which gave

* Robin and Verdeil, *Chimie Anatomique et Physiologique*, tome iii. p. 66.

† Cours de Physiologie fait à la Faculté de Médecine de Paris. Par P. Berard, Professeur de Physiologie, &c., tome iii. p. 118. Paris, 1851.

them a beaded appearance. Lecanu also observed this peculiarity. In the atlas of Robin and Verdeil's *Anatomical Chemistry* we have a beautiful representation of the crystals of seroline from the blood. These observers have not noticed the beaded appearance mentioned by Boudet, but represent the crystals in the form of delicate transparent needles, of variable size, some very small and others quite wide, terminating in a fine pointed extremity, which in some of the wider crystals is bifurcated, or even trifurcated, with the edges of the larger crystals frequently split, as it were, into delicate filaments. The smaller crystals frequently arrange themselves in a fan shape. Robin and Verdeil attribute the beaded appearance mentioned by Boudet and Lecanu to the presence of little globules of fatty matter mixed with the crystals. This seems probable, for we shall see when we examine the process of extraction employed by Boudet, that he probably did not succeed in obtaining it in a pure form. The appearance of these crystals has already been given in some of the diagrams of cholesterine, especially in Figs. 2, 6, 7, and 9. I have been able to follow the process of crystallization in the specimens extracted from the feces from its commencement, and have found that the splitting of the ends and edges of the crystals did not take place at first. The needles which were first found had regular borders and single pointed extremities; but after a few days they split up in the manner described and figured by Robin and Verdeil. (See Figs. 14 and 15.)

Situations.—Up to this time the seroline (or stercorine) has only been found in the serum of the blood, and there in but very small quantity, the proportion being, according to the analyses of Beequerel and Rodier, 0.020 to 0.025 of a part per 1,000 parts of blood. They have seen it mount up to 0.060 parts, and descend to a quantity almost inappreciable.*

Process of extraction.—In the first observations I made on the blood this substance was observed before the cholesterine. In these observations the blood was dried, pulverized, extracted with ether, the ether evaporated, the residue extracted with boiling alcohol, and then a solution of caustic potash added, which remained on the specimens for a number of days. In all the subsequent analyses of the blood the cholesterine was extracted perfectly pure, and *no stercorine whatever was observed*. The following was the difference in the modes of analysis: In the latter case the solution of potash was not allowed to remain on the specimens more than an hour or two; but was washed

* *Traite de Chimie Pathologique Appliquee a la Medecine Pratique.* Par M. Alf. Beequerel and M. A. Rodier, p. 62. Paris, 1854.

away, and the residuc, which was left on the filter, redissolved in ether. The failure to detect the stercorine in all the latter observations on the blood, which are twenty-four in number, inclines me to the opinion that it does not primarily exist in that fluid; and that when it has appeared in the extract it has been due to a transformation of a portion of the cholesterine. This view seems the more probable, as I have definitely ascertained by observations on the feces, which will be detailed farther on, that the cholesterine is capable of being changed into stercorine, and that this change actually takes place before it is discharged from the body. In my observations on the blood no attempt was made to get rid of this substance, and *though it is soluable in the menstrua which were used to extract the cholesterine, and not destroyed by any of the means that were employed to purify the cholesterine, it never appeared in the extract.* In these experiments the study of the stercorine in the blood has not been attempted; and though it is not possible to state at present how the cholesterine was transformed in the first observations, it seems most rational to suppose, in endeavoring to explain its absence in the twenty-four succeeding specimens of blood which were examined, that such a change had taken place.

I am inclined to the opinion, then, though I cannot state it positively, that the element under consideration does not exist in the blood as a proximate principle, but is formed from the cholesterine, in some unexplained way, by the processes which have been used for its extraction.* This transformation does not take place during the extraction of this substance from the feces, because I have in but a single instance been able to extract cholesterine by the processes which are successful in obtaining it in other situations in which it exists, including the meconium.

The stercorine may be extracted from the feces in the following way: The feces are evaporated to dryness, pulverized and treated with ether, which should be allowed to remain from twelve to twenty-four hours, protected from evaporation. The ether is then separated and decolorized by filtration through animal charcoal, fresh ether being added till the original quantity has passed through. It is impossible to decolorize the solution entirely, but it should be made to pass through a very pale amber tinge and perfectly clear. The ether is then evaporated and the residue extracted with boiling alcohol. The alcohol is

* As we have no ultimate analysis of this substance, it is impossible to enter into any chemical speculations with regard to the change from cholesterine, as we may in the instance of the creatine and creatinine, or the urea and carbonate of ammonia.

then evaporated and the residue treated with a solution of caustic potash, at a temperature a little below the boiling point, for from one to two hours. This dissolves all the saponifiable fats, and the solution is then largely diluted with water, thrown on a filter, and washed till the fluid which passes through is perfectly clear and neutral. The filter is then dried at a moderate temperature, and the residue washed out with ether, which is evaporated, extracted with boiling alcohol, and evaporated again. The residue is composed of pure stercorine.* The extract thus obtained is a clear, slightly amber, oily substance, of about the consistence of the ordinary Canada balsam used in microscopic preparations, and in four or five days begins to show the characteristic crystals. These are at first few in number; but soon the entire mass assumes a crystalline form. In a specimen which I have extracted from the feces I have 10.417 grains, consisting, apparently, of nothing but crystals. If the extract be evaporated in a very thin watch-glass it may be examined with the microscope daily, and the process of the formation of the crystals observed. These crystals, after they are fully formed, may be examined satisfactorily with a-half or quarter inch objective.

History of seroline.—Very little is to be said with regard to the history of this substance. Boudet first described it in 1833.† Lecanu confirmed these observations in 1837.‡ Since then it has been studied by Becquerel and Rodier,§ Chatin and Sandras,|| W. Marcet and Verdeil,¶ Gobley states, in an article published in the *Journal de Chimie Medicale*, that the substance described by Boudet is not an immediate principle but a mixture of several substances, confounding it, however, with cholesterine.** Robin and Verdeil adopt this view, but consider it entirely different from the cholesterine.††

This element, existing, as it does, in large quantities in the

* As this substance is said to be volatilized at a high temperature, it is important, in our examination, to avoid as much as possible the application of heat. Large quantities of it are extracted from the feces after evaporation over an ordinary water bath, but it might be better to evaporate the excrements at a lower temperature.

† Boudet. Loc. cit.

‡ Lecanu. Etudes chim. sur le sang humain, these. Paris, 1837, page 55.

§ Becquerel and Rodier. Recherches relatives a la comp. du sang. (Comptes Rendus. Paris, 144, tome xix. p. 1084.)

|| Chatin et Sandras. Gaz. des hopit., 1849, page 289.

¶ Berard. Loc. cit.

** Gobley. Sur les matieres grasses du sang. (Journal de Chimie Medicale, 1851. Paris, page 577.)

†† Robin et Verdeil. Loc. cit.

fecal matter, must take its place among the important excrementitious substances discharged from the organism, not second in importance even to the urea. It is a curious fact that while the urea was known as an ingredient of the urine long before it could be demonstrated in the blood, taking its name from that fluid, we have the stercorine, an excrement of great importance, discovered in the blood and never till now recognized as an excrement and an ingredient of the feces, taking a name from the serum of the blood, which does not indicate at all its excrementitious properties nor the situation in which it is found in greatest abundance. As seroline has been heretofore a substance of very little prominence, and as it probably does not exist normally in the serum of the blood, and if at all, in insignificant quantity, the application seems a misnomer. We want a name which will indicate its excrementitious properties, and the channel by which it is evacuated, and I have adopted the name STERCORINE* as a more appropriate and more suggestive of its properties, as it is undoubtedly the most important excrement discharged by the anus.

The questions which now arise with regard to this substance open a field of inquiry too extensive, by far, to be thoroughly investigated in the time that could be devoted to this subject, or to be discussed in the limits of this paper. We wish to know the entire history of this product; the quantity discharged in twenty-four hours; variations that may take place with season, age, sex, diet, digestion, &c.; and more especially, the modifications which occur in its discharge in connection with diseased conditions. These points are of great importance, but require a long and laborious series of investigations for their elucidation. What has been done in a measure for the *urea* must be done for the *stercorine*, before we can arrive at a precise idea of its relations to disease. For this purpose a large number of quantitative analyses of healthy feces must be made and compared with similar analyses in different diseases. At present I have only instituted a sufficient number of examinations to substantiate the statements I have made with regard to the formation and discharge of this substance, and added a few examinations of feces in disease which bear upon the same points. I hope at some future time to go more fully into the study of the feces, and contribute something towards the elucidation of some of the questions which naturally arise. In the meantime, I present the following observations on the stercorine as it appears in the feces:—

* From *Stercus*, oris, dung.

Exp. 9. Seven and a-half ounces of feces, perfectly normal in appearance, and being the entire quantity passed in the morning at the regular time for an evacuation, were taken from a healthy male, twenty-six years of age. After being evaporated, and pulverized finely in an agate mortar, the residue weighed 2 oz. 57.313 grains. A small quantity was then extracted with alcohol, the solution being of a yellow color, and about six times its volume of ether added. The ether was filtered after standing for fifteen minutes, the filter washed with distilled water, and the solution tested with Pettenkoffer's test for the biliary salts. *None of these salts were present.*

A watery solution was then made of another portion, which was filtered and tested with nitric acid, but failed to show the reactions of the coloring matter of the bile.

The dry residue was then treated with five fluidounces of ether for twenty hours, when it was filtered through animal charcoal, fresh ether being added till the fluid which passed through made five ounces. It came through perfectly clear and of a very light golden tinge. It was then evaporated, leaving a golden yellow fat with a number of whitish resinous masses. It was then extracted with five of boiling alcohol, which removed everything but a small quantity of bright yellow oil, and filtered while hot. It became turbid on cooling, and was set aside to evaporate. Both the ethereal and alcoholic extracts had a very offensive rancid odor. The residue, after the evaporation of the alcohol, consisted of a considerable quantity of fat of a yellowish color and a consistence like thick turpentine. It was then treated with a solution of caustic potash, kept near 212° for about thirty minutes and allowed to stand for twenty hours. At the end of that time a large quantity of fat floated on the top of the fluid not at all affected by the alkali. It was then largely diluted with distilled water filtered and washed, the filter dried, and the residue redissolved in ether. This ethereal solution was evaporated and the residue extracted with boiling alcohol as before. After the alcohol had evaporated, a small quantity was treated with sulphuric acid, which produced a peculiar red color similar to that produced when the acid was added to a specimen of cholesterine, extracted from the blood and used for purposes of comparison.

Five days after, the specimen was examined with a four-tenth inch objective, and *presented some crystals which looked like seroline*; but it was impossible, on account of the thickness of the glass capsule to apply a sufficiently high power to make this certain. Some long, pale, radiating crystals were observed,

composition unknown, but they were not the crystals of exeretine described by Marcet.* The specimen was treated again with a solution of caustic potash and kept at nearly the boiling point of water for three and a-quarter hours, most of the fat floating on the top of the fluid in white flakes and yellow drops, but a considerable quantity undergoing saponification, as evidenced by the color of the potash solution. The potash was then removed by filtration, and the residue dissolved in ether and extracted with boiling alcohol as before.

Four days after the evaporation of the alcohol a large number of the characteristic crystals were formed. These did not have the split extremities and edges noted by Robin, but terminated in a single point, and had regular borders; these crystals are represented in Fig. 14.

In a few days the entire mass had assumed a crystalline form, and the crystals then presented split extremities and borders such as are mentioned by Robin. (See Fig 15.)

The quantity of the stercorine was 10.417 grains.

Exp. 10. Another analysis was made of the feces from the same individual. During the experiment a large quantity was unfortunately lost, and the examination, therefore, was not quantitative. The presence of stercorine was established.

Exp. 11. The feces of the dog from which blood of the carotid and internal jugular on one side had been taken fifteen days

* Marcet, in two papers published in the *Philosophical Transactions*, for 1854 and 1857, describes a new proximate principle in the feces which he calls Exeretine. This he obtains in the following way: He first treats the feces with boiling alcohol till nothing can be extracted. A sediment deposits from the alcohol on cooling. The alcoholic solution is acid. Milk of lime is added to the solution, which gives a yellowish brown precipitate, leaving a clear, straw-colored fluid. The precipitate is then collected on a filter, dried, afterwards agitated with ether, and filtered, forming a clear yellow solution. In from one to three days beautiful silky crystals collect in masses, or tufts, adhering to the sides of the vessel, throwing out ramifications in every direction. These, viewed under the microscope, are in the form of acicular, four-sided prisms, and this substance is called by Dr. Marcet, Exeretine, and is found nowhere but in the feces. It is soluble in ether and hot alcohol, sparingly so in cold alcohol, and insoluble in hot or cold water. It does not crystallize from an alcoholic solution on cooling, but crystallizes from ether. When suspended in boiling water it fuses into resinous masses, and floats on the top. Its fusing point is 203° to 205° Fahr. It may be boiled for hours with potash without undergoing saponification.

In the article published in 1857, Dr. Marcet gives the composition of the Exeretine $C^{78} H^{78} O^2 S^1$.

There is no similarity between the form of the substance described by Marcet and the stercorine. Its high fusing point, 203° to 205° Fahr., and its crystallization from an ethereal solution, also serve to distinguish it from the stercorine, which fuses at 96° 8', and does not crystallize in an ethereal solution.

before, the animal having entirely recovered, were examined. The analysis was not quantitative. The feces were treated in the way already described, and the presence of stercorine determined.

Exp. 12. A specimen of feces voided by a healthy dog, fasting, was examined in the usual way for stercorine. *After the final extract had evaporated, it was examined microscopically, and found to contain, in addition to the stercorine, a considerable quantity of cholesterine, crystallized in beautiful tablets. This is the only examination of feces in which I have found cholesterine.* The proportion of stercorine and cholesterine was as follows:—

Quantity of feces,	137.513 grains.
Stercorine with a little cholesterine,	0.216 "

These examinations of the feces in health show that they invariably contain a non-saponifiable fatty substance known under the name of *seroline*, but which I have called *stercorine*. In but one of these analyses, the last, did I find any cholesterine, though the first were originally undertaken with a view to the extraction of this substance.

The stercorine has never before been detected in the feces, and, as far as my knowledge of its physiological properties is concerned, may be considered a new substance; the discovery of which, in this situation, marks it as one of the most important of the products of destructive assimilation. The next question which arises, then, is with regard to its origin.

Origin of the stercorine.—In our study of the chemical properties of this substance, we have already seen that it is one of the non-saponifiable fats, having many characters in common with the cholesterine. It has been described under the name of *seroline*, as existing in the blood, in very minute quantity, but does not exist in any of the fluids which are poured into the alimentary canal. The cholesterine, however, which it so closely resembles, is one of the constituents of the bile. The fact that the cholesterine is discharged into the small intestine, and not usually found in the evacuations, while stercorine is abundant, would at once point to a possible connection between these two substances. In most cases, in health, cholesterine disappears, and stercorine is found; but in some rare instances, as in the single examination of dogs' feces, *Exp. 12*, the two substances coexist in the evacuations, the stercorine, in the example just mentioned, in much the greater quantity. The question then arises: Is the cholesterine capable of being converted into stercorine, and does the latter substance originate from a transfor-

mation of the cholesterine of the bile? Before we treat of this subject experimentally, let us examine the facts which we already have bearing on this point. No examinations of the feces have ever been made for *stercorine*, but under certain circumstances *cholesterine* has been found discharged by the anus without alteration.

Cholesterine has been detected in the meconium, in the feces of hibernating animals, and occasionally in ordinary feces, though I can find no observation of this kind but the one just recorded.

Meconium.—Cholesterine exists in the meconium in considerable quantity, where it may be seen in tablets by a simple microscopic examination, and from which it may be extracted in quantity, and with great facility. The *stercorine*, or *seroline*, has never been mentioned as existing in this situation. In the single examination I have made of the meconium I found an abundance of cholesterine, 6.245 parts per 1,000, but no *stercorine*. There is no difficulty in explaining the origin of the cholesterine in the meconium. Long before any food is taken into the alimentary canal, and before the exclusively digestive fluids are formed, the bile is formed and discharged. It accumulates in the intestine, with other matters constituting the meconium, and is finally evacuated soon after birth. Hence the cholesterine exists in large abundance; but when the digestive fluids are secreted, and food is received into the alimentary canal, the cholesterine is lost and the *stercorine* makes its appearance.

Feces of hibernating animals.—As the excreting function of the liver commences before food is taken into the alimentary canal, so it goes on during the state of hibernation, when the animal takes no food for weeks, or even months. Under these circumstances, the cholesterine is found unchanged in the feces, but it disappears when the animal arouses, and the digestive organs resume their function.

Normal feces.—In the normal feces the cholesterine is generally absent; but in Exp. 12, it was found in small quantity, mixed with *stercorine*. This animal had been certainly twenty-four hours, and probably forty-eight hours, without food. The feces were of normal color and consistence.

These facts seem to show that before digestion commences, as in the foetus, and when it is suspended, as in hibernating animals and in Exp. 12, cholesterine passes through the alimentary canal unchanged. But as soon as digestion commences, the cholesterine is lost in the feces, and its place is supplied by *stercorine*. It seems almost certain, then, that in its passage

down the alimentary canal, the cholesterine of the bile is acted upon by some of the digestive fluids and changed into stercorine. This change seems to be incident to the digestive act; for before digestion commences, or when it is suspended, the cholesterine passes through unchanged. A conclusive observation would be to cut off the bile from the intestines, and consequently the cholesterine, and notice the effect upon the production of stercorine. In a case of jaundice from duodenitis (which will be more minutely detailed in the section on the pathological relations of cholesterine,) the necessary conditions for this observation seemed to be fulfilled. The patient suffered from intense jaundice, dependent upon obstruction of the common bile duct from duodenitis. The feces were clay-colored. After a time, the patient was relieved of the jaundice, and the feces regained their natural color. While the feces were decolorized, and when the icterus was most marked, it is probable that the bile was entirely cut off from the alimentary canal. This condition was relieved, however, when the feces regained their color, and the icterus disappeared. For the purpose of ascertaining the effect of the obstruction to the flow of bile on the stercorine in the feces, and of the re-establishment of the flow, the stools were examined chemically during the jaundice, and after the patient had recovered.

Analysis of decolorized feces.—The quantity of feces examined was 941.4 grains. After evaporation, extraction with ether, and extraction of the residue left after the evaporation of the ether, with hot alcohol, the fat, which was very abundant, was entirely saponified by boiling for fifteen minutes with a solution of caustic potash, showing that neither cholesterine nor stercorine was present.

Analysis of feces from the same patient after they had become normal in color.—This analysis was made nineteen days after the preceding one. The quantity of feces was small. The specimen was treated in the usual way, showing stercorine in the following proportions:—

Quantity of feces,	.	.	.	.	.	.	502. grains.
“ stercorine,	.	.	.	.	.	.	0.34 “

Taken in connection with the facts which have already been cited with regard to the discharge of cholesterine by the anus, when digestion is not going on, this observation establishes the origin of the stercorine. *It is produced by a transformation, connected with the digestive act, of the cholesterine of the bile.* When the cholesterine does not find its way into the alimentary canal, as was the case in the first analysis of feces, stercorine is

not found in the dejections; when the discharge is re-established, the stercorine reappears.

Comparison of the daily quantity of stercorine discharged, with the quantity of cholesterine produced by the liver.—The quantity of stercorine which I extracted from the regular daily feces of an adult healthy male, was 10.417 grains. As there is no cholesterine found in the dejections, this should represent the entire quantity of cholesterine excreted in the twenty-four hours. A comparison of this quantity with the estimated quantity of cholesterine discharged in the day, shows this to be the case.

Quantity of bile in the twenty-four hours, (Dalton)	16.940 grains.*
“ “ cholesterine at 0.618 pts. per 1,000, (A. Flint, Jr.)	10.469† “
“ “ stercorine discharged, (<i>Id.</i>)	10.417 “
Difference,	.052

This insignificant difference of .052 of a grain, at once proves the correctness of the estimate of the daily quantity of bile excreted, the accuracy of the estimate of the proportion of cholesterine in the bile, and of the quantitative analysis for the stercorine; and made, as the three observations were, without the slightest reference to each other, adds the final link to the chain of evidence in support of the view that *the cholesterine, in its passage down the alimentary canal, is converted into stercorine, in which form it is discharged in the feces.*

The history of the cholesterine thus resolves itself:—

1. *Cholesterine is an effete material, produced by the destructive assimilation of nervous matters, and absorbed by the blood.*
2. *It is separated from the blood in its passage through the liver, enters into the composition of the bile, giving this fluid its excrementitious character.*
3. *It is poured with the bile into the upper part of the small intestine, when the process of digestion induces a change into stercorine; in which form it is discharged by the feces.*
4. *Stercorine, the great excrementitious element of the feces, is one of the most important excrements produced by the waste of the system.*

PATHOLOGICAL RELATIONS OF CHOLESTERINE.—With the limited data we have on the subject of the variations in the quantity of cholesterine in health and disease, it is impossible to do more than merely to open the great subject of its pathological rela-

* Dalton's Treatise on Human Physiology, 2d edition, page 171.

† See table, page 760.

tions. To a certain extent, all questions in physiology have for an end the elucidation of points in pathology. The practical physician, who may be the reader of this article, will naturally inquire if the more definite views which we are now enabled to hold with regard to the function of the bile be of any use to him in the study and treatment of disease. It is certain that no addition to our knowledge of the functions of the healthy body is without its bearings on disease, immediate or remote. What may seem to be simply a matter of interest to the pure physiologist, without apparently any practical bearing, is sure at some time to be so connected, perhaps, with other advances, as to be useful to the practitioner. But the pathological relations of an important excretion do not have a practical interest so remote, especially when this function is connected with the liver. Almost from time immemorial, a large number of diseases have been referred to derangement of the liver, and in their treatment, it has been thought of immense importance to promote the secretion of the bile. A certain class of remedies supposed to regulate the function of the bile, has been constantly employed by physicians. At the present day, these ideas have fallen somewhat into disrepute; for the enlightened physician is now accustomed to base his pathological views upon a certain amount of definite knowledge, and it has been found that both the physiology and the pathology of the bile have been very little understood. The older practitioners had, as we have now, a certain class of cases characterized by a general *malaise*, and having indefinite symptoms which were attributed to "biliousness," in which they were in the habit of employing the cholagogues, with mercury at the head, with undoubted success. It is true that, as our knowledge of disease becomes more accurate, the conditions which were supposed to indicate "biliousness," have become referred to other disorders; but no great advance has been made in pathology of the liver, and there are yet many conditions which may be successfully—though empirically—treated, the true character of which is unknown. It is on this obscure subject that it is hoped the preceding physiological investigations will throw some light. To repeat an illustration made use of before, a knowledge of the functions of cholesterine, and its history in the healthy organism, should contribute as much to the pathology of diseases dependent on derangement of this function, and has the development of the functions of the urica for diseases now known to be dependent on uremia.

CHOLESTEREMIA.

In common with other excrementitious substances, which invariably exist in the blood in health, if the function of the eliminating organ be interfered with, accumulation takes place in the blood. This fact has already been incidentally referred to in treating of the properties of the cholesterine which allied it to effete substances. It takes place with the urea; but cases of uremic poisoning occurred, and patients died in uremic coma, long before the cause of it was understood. It is the same with the bile. Ordinary cases of jaundice, which have been called, by Piorry, cholemia, are not of a dangerous character; but there are cases in which jaundice, though less marked as regards color, is a very different condition. Here we have evidently the operation of some poison in the blood, and coma and death from its effects on the brain, follow as in retention of the urea. Pathologists inquire why there is this difference in the severity of cases of icterus? Chemists have analyzed the blood in the hope of explaining it by the presence of the glyco-cholates and tauro-cholates of soda in the grave cases, regarding them as the only important constituents of the bile. But their failure to detect these substances has left the question still unanswered.

In simple cases of jaundice we have a resorption of the coloring matter of the bile from the excretory passages.

In grave cases of jaundice, which almost invariably terminate fatally, we have a retention of the cholesterine in the blood, or cholesteremia.

I have been forced to make use of cases of disease exclusively in studying this condition, for no one has yet been able, in the larger animals, to extirpate the liver, as we do the kidneys, notice the symptoms of poisoning, and demonstrate the accumulation of cholesterine in the blood. Nor have I yet been able, on account of the insolubility of the cholesterine, to make experiments by injecting it into the circulation. I had, however, an opportunity of making an examination of the blood of a patient in the last stages of cirrhosis of the liver, accompanied with jaundice, and compare it with an examination of the blood of a patient suffering from simple icterus. Both of these patients had decoloration of the feces; but in the first, the icterus was a grave symptom, accompanying the last stages of the disorganization of the liver; while in the latter, it was simply dependent on duodenitis, the prognosis was favorable, and verified by the result. As icterus accompanying jaundice is of very infrequent occurrence, I deem myself very fortunate in having an opportunity of comparing the two cases.

CASE I. *Jaundice dependent on obstruction from duodenitis.*—Mary Bishop, æt. 42, native of Ireland, widow, occupation servant, was admitted into the Blackwell's Island Hospital, June 12, 1862, with the following symptoms: Slight febrile movement, with severe pain over the duodenum; the surface of the body was highly icterosed; the stools were clay-colored; urine high-colored, but not examined for bile; lungs and heart normal; appetite rather poor; no ascites. The icterus had existed since about May 23, 1862. The patient was confined to the bed.

Dr. Flint, the attending physician, pronounced it a case of icterus dependent on duodenitis.

Treatment.—Laxatives daily, with good diet and a moderate amount of stimulus.

June 21. A small quantity of blood was drawn from the arm for examination, and June 23, the feces were collected for the same purpose.

June 27. The patient remains about the same.

July 11. All pains and tenderness over the duodenum have disappeared. She has steadily improved since the last record. The stools have been natural for several days. Though confined to the bed most of the time, she is able to sit up two or three hours daily. The jaundice has been gradually diminishing, and three or four days ago it had entirely disappeared, and is now absent.

July 12. Another specimen of the feces, which was of normal appearance, was taken for examination.

Analysis of the blood for cholesterine.—The blood was examined about sixteen hours after it was taken from the arm. It had entirely separated into serum and clot. The serum was of a bright yellow color—more markedly bilious than in the succeeding case. It was evaporated, pulverized, and a quantitative analysis for cholesterine made, with the following results:—

Quantity of blood,	212.428 grains.
Quantity of cholesterine,	0.108 "
Proportion of cholesterine per 1,000 pts. of blood,	0.508 "

CASE II. *Jaundice with cirrhosis.*—Ann Thompson, æt. 39, native of Ireland, occupation servant, was admitted into the Blackwell's Island Hospital June 16, 1862, and gave the following history:—

Three months ago she contracted a severe cold, which was accompanied with swelling of the left hand and of both legs, continuing for eight or nine weeks. At the end of that time,

she noticed that the abdomen was increasing in size. She was then very weak, the urine was scanty, bowels regular up to the time when she entered the hospital. She denied having been in the habit of drinking spirit, but acknowledged that she drank beer.

June 18. The surface of the body was very much icterosed, the color being very marked under the tongue and in the conjunctiva; the abdomen was full of fluid; pulse 90, small and weak; bowels loose, and the dejections clay-colored; the urine highly tinged with bile and copious; appetite very poor. She was tapped, and about eight quarts of clear, straw-colored serum were evacuated. The patient was confined to the bed.

Dr. Flint, the attending physician, diagnosticated cirrhosis.

The treatment consisted of sustaining measures, with stimulants, and the tinct. ferri muriat.

June 21. A small quantity of blood was taken from the arm for examination, and *June 23*, a specimen of the feces was obtained for the same purpose.

The patient died *June 27*. There were no convulsions, and she was sensible, though in a state of stupor, up to twenty minutes before the fatal termination. The stupor existed three or four days before death. Two days before, she complained of double vision. The icterus was excessive up to the time of her death.

Autopsy.—The abdomen contained about twelve quarts of fluid. The liver was examined; its weight was 3lbs. 12½ oz. It was very light-colored, and had something of the “hob nail” appearance; presenting, in short, the gross characters of cirrhosis. The gall-bladder was very much contracted, and contained only about two drachms of bile. Microscopic examination of the organ showed the liver-cells shrunken. The fibrous substance was increased in quantity, and there were present a large number of rather angular globules of fat.

Analysis of the blood for cholesterine.—The blood was examined about sixteen hours after it was drawn. It had fully separated into serum and clot, and the serum was of a greenish, yellow color. The whole, serum and clot, was then evaporated, pulverized, and a quantitative analysis made for cholesterine in the manner already indicated, with the following results:—

Quantity of blood,	50.776 grains.
Quantity of cholesterine,	0.093 “
Proportion of cholesterine per 1,000 pts.	1.850 “

The following table gives a comparison of these results with those obtained in the analyses of the three specimens of healthy

blood from the arm, which were examined at the same time, and all five specimens subjected to identical processes.

Table of Quantity of Cholesterine in Healthy Blood, Blood from Simple Jaundice, and Jaundice with Cirrhosis.

HEALTHY BLOOD.		BLOOD OF JAUNDICE.	
	Cholesterine per 1,000 pts.		Cholesterine per 1,000 pts.
Male, æt. 35, . . .	0.445	CASE I. Simple Jaundice, . . .	0.508
" " 22, . . .	0.658	" II. Jaundice with Cir-	
" " 24, . . .	0.751	rhosis, . . .	1.850
CASE I. Simple Jaundice. Percentage of increase over minimum			
	of healthy blood, . . .		14.157
	Decrease below maximum, . .		32.357
CASE II. Jaundice with Cirrhosis. Increase over minimum, . .			
			315.730
			Increase over maximum, . . 146.338

The results of the examination of the blood in these cases of disease are very striking and instructive. We have already seen that the variation in health are very considerable. In the three analyses here noted, the maximum was 0.751, and the minimum 0.445 pts. per 1,000. The conditions which regulate this variation it has not yet been possible to study; but we know enough with regard to it to see that in the examination of blood in disease, the cholesterine must mount considerably above the maximum, or fall much below the minimum, to be considered beyond the limits of health. But in the second specimen of jaundiced blood, the variation from the limits of health is so considerable as to enable us to draw very important physiological and pathological conclusions.

In the first place, what is the bearing of these observations on the *physiology* of cholesterine? As before remarked, no one has been able to remove the liver from a living animal, and notice the effect upon the quantity of cholesterine in the blood.* This experiment, if it were possible, and if it showed that the cholesterine increased in quantity, and killed the animal, would be positive proof that it was an excrementitious substance, and that it was removed by the liver. But while the experimental physiologist contributes much to the information of the pathologist by artificially producing abnormal conditions, pathology furnishes a multitude of useful experiments of Nature, if we

* Muller, Kunde, and Moleschott have succeeded in extirpating the liver from frogs, and keeping them alive for two or three days—Moleschott preserving them for several weeks. These observations were made with reference to the accumulation of the biliary salts, and of the bile pigment in the blood, their attention not having been directed to cholesterine. A series of experiments on frogs was commenced by the writer, but they promised to be so prolonged that they were deferred.

may so term them, which are invaluable to the physiologist. In the present instance, cases of disease of the liver present a condition which we are not at present able to imitate by experiments on the lower animals. Disorganizing disease of the liver must interfere with its excretory function, as Bright's disease does with the elimination of urea; and if cholesterine be an excrementitious substance to be removed by the liver, when the liver is seriously affected with structural disease, we will have an accumulation of it in the blood. *This, if fully established, is positive proof of the character of cholesterine and the function of the liver connected with its elimination.*

What do we learn then by a comparison of the blood in Case II. of jaundice dependent on cirrhosis, with healthy blood and a study of the history of the case?

The cholesterine, in this instance, is enormously increased in quantity, 315.730 per cent over the minimum, and 146.338 per cent over the maximum. The case, as far as symptoms are concerned, was of a very grave character. The patient not only suffered from an accumulation of fluid, but there was evidently a poison in the system. The patient died after three or four days of stupor, and, on *post mortem* examination, the liver was found disorganized. There was a deficient secretion of bile, and had been for a long time, for the gall-bladder was very much contracted, and the stools were clay-colored. In short the patient died of *cholesteremia*; and the fact that this condition can exist is a proof of the excrementitious function of the cholesterine, as uremia, as a toxic condition, presupposes that urea is an excrement.

Physiologically this case fulfils the essential condition of excrementitious substances; namely, accumulation in the blood when the eliminating functions of the excretory organs are interfered with. The liver became so disorganized that its functions were seriously embarrassed, and the quantity of cholesterine in the blood increased to an enormous extent.

The *pathological* deductions from the facts which have been elicited by the examination of the blood in these cases seem to me of great importance. The literature of diseases connected with disorders of the liver is full of theories, more or less plausible, to explain certain conditions which have long been established by clinical observation. We have cases of simple jaundice which are not dangerous to life, and sometimes, though the icterus be excessive, run a certain course without even interfering with the ordinary avocations of the patient. Again, we have jaundice, which is invariably fatal. That disease

described by Frerichs under the name of acute atrophy of the liver, and called by some acute jaundice, is one of the most serious diseases of which we have any knowledge. The existence of this great difference has led clinical observers to attribute the mild cases to simple resorption of the *coloring* matter of the bile, and the severe cases to a retention or resorption of some of its more important constituents; especially as it has also been observed that the symptoms which characterize the latter condition occasionally occur in structural diseases of the liver without any discoloration of the skin. But the pathology of this disease has been entirely unknown. It has been thought that in such cases some of the elements of the bile should exist in the blood. Frerichs says: "In the same way that urea accumulates in large quantity in the blood in granular degeneration of the kidneys, so ought the biliary acids and bile-pigment to accumulate in the blood in cases of granular liver. Repeated observations have proved that this is not the case."* Experiments on animals have been followed with like results. The frogs that were kept alive by Moleschott for weeks after the removal of the liver did not present a trace of any of the biliary salts or pigment in any part of the system, showing that these matters are manufactured in the liver. This obscurity, which leads to all sorts of theories with regard to liver pathology, must exist as long as our knowledge of the physiology of the bile is so indefinite. If observers had looked for cholesterine—a substance which pre-exists in the blood and is separated by the liver—instead of the biliary salts—which do not pre-exist in the blood, are manufactured in the liver, as these experiments tended to show, and are peculiar to the bile—they would have met with different results. The very fact that the biliary salts are peculiar to the bile, and found in no other fluid, should have led them to disregard this substance in their analyses of the blood, because this stamps it as a secretion and distinguishes it from the excretions; they should have looked for some substance which exists in the blood as well as the bile, an indispensable condition of an excretion, and this substance is the cholesterine.

Understanding, as we now do, the physiological relations of the cholesterine, we may divide jaundice into two varieties: simple *Icterus*, or yellowness, and a condition which I have called *Cholesteremia*. We may have, also, the latter condition unaccompanied by discoloration of the skin.

* A Clinical Treatise on the Diseases of the Liver, by Dr. Fried. Theod. Frerichs, Prof. of Clinical Medicine, &c., Berlin. Translated by Charles Murchison, M.D. The New Sydenham Society, London, 1860, vol. i. p. 83.

Simple icterus.—In simple icterus we have a resorption of the coloring matter from the biliary passages. As it has been proven that the coloring matter of the bile appears first in the liver, when it exists in the blood, it is not due to accumulation, but to resorption. In these cases the resorption is generally dependent on obstruction from some cause, by means of which the bile is confined. The patient suffers only from the disease which causes the obstruction, and from the derangement of digestion which is due to the absence of bile in the intestinal canal. In those cases, in which we have no organic lesion of the liver, there is no danger of absorption of the cholesterine. We have a condition which is analogous to retention of urine. The patient suffers simply from retention of bile in the excretory passages, and cholesteremia is no more to be expected from obstruction of the bile duct without structural changes of the liver, than uremia is to be looked for in vesical retention of urine without organic change in the kidneys. Excrements are not reabsorbed, though they may be retained in the blood.

The quantity of cholesterine in the blood is not necessarily increased in simple icterus, for the liver is still performing its function of eliminating it, and when once separated from the blood it is not taken up again. The analysis of the blood in Case I. indicated a proportion of 0.508 parts per 1,000, which is within the limits of health; a little below the mean, probably on account of the somewhat enfeebled condition of the patient.

The feces may or may not be decolorized, this depending on the extent of the obstruction to the passage of bile into the intestine. The obstruction to the flow of bile is frequently removed before the system has time to remove the coloration of the skin, and the feces become normal while the patient is icterosed. In some instances there is no change in the appearance of the dejections during the course of the disease. When the dejections are entirely decolorized there is an absence of the *stercorine*, into which the cholesterine is transformed before it is discharged, with an abnormal quantity of fat which has passed through undigested.* This element reappears in the feces when the flow of bile is re-established and they assume their normal color.

The two following analyses were made of the feces in Case

* This fact, which has often been remarked, seems to indicate that the bile is actively concerned in the digestion of the fats. I have noticed that dogs with biliary fistulæ, though with a ravenous appetite, refuse to eat fat meat. This disinclination to eat fat has been noticed in cases of jaundice with decoloration of the feces.

I.; one, when they were entirely decolorized, and the patient was very much icterosed, and the other, when she had recovered, and the dejections had assumed their natural appearance.

Feces of Case I. Jaundice dependent on duodenitis First analysis.—The feces were clay-colored, and apparently destitute of bile. They weighed 941.4 grains. They were evaporated to dryness without difficulty, pulverized, digested with f5ij of ether for twenty hours, filtered through animal charecoal, evaporated and extracted with hot alcohol. The fatty residue after evaporation of the alcohol was very abundant.

The residue was then treated with a solution of caustic potash and exposed to a gentle heat. In fifteen minutes it became entirely saponified, forming a clear homogeneous soap with no residue, showing the entire absence of stercorine. The soap was boiled down and moulded into a cake, which I preserved and which weighs 34 grains. The following are the results of the examination:—

Quantity of feces,	.	.	.	.	.	.	941.4 grains.
" fat,	.	.	.	.	.	.	39.124 "
Percentage of fat,	.	.	.	.	.	.	4.144
No stercorine or other non-saponifiable fats.							

Feces nineteen days after. Second analysis.—At that time the patient had entirely recovered from the jaundice, and the feces had regained their natural appearance. A small specimen was taken for chemical examination, which was done, employing the process already described for the extraction of stercorine, with the following results:—

Quantity of feces,	.	.	.	.	.	.	503. grains.
" stercorine,	.	.	.	.	.	.	0.340 "

Cholesteremia with ieterus.—In jaundice complicated with blood poisoning we have a very different state of things as regards gravity of symptoms and prognosis. This occurs in acute jaundice, or when it accompanies, and is dependent upon, structural change in the liver, as the jaundice of cirrhosis. The difference in the pathology of these cases, compared with those of simple ieterus, has long been recognized; but, as before remarked, analysis of the blood has failed to throw any light on the subject, because chemists directed their attention exclusively to the biliary salts. Frerichs says:—

"I have myself repeatedly examined jaundiced blood, which has been obtained by venesection, or still more frequently, from the heart or *venæ cavæ* of the dead body, for the biliary acids, and their immediate derivatives; and more recently I have had it examined by my assistant, Dr. Valentin, but always with negative results. No substance could be found in the alcoholic

extract of the blood which yielded any indication, by Pettenkoffer's test for the biliary acids, whether this alcoholic extract was treated directly with sulphuric acid and sugar, or whether, in order to get rid of foreign substances, a watery extract of it was first prepared. This coincides with the experience of most of the older observers."*

In cases of blood poisoning by retention and accumulation of elements of the bile in the blood, we have, as the important pathological condition, the great increase in the quantity of cholesterine. The fact of accumulation of this substance in the blood in certain cases of icterus, has been noticed by Becquerel and Rodier; but they do not connect it with structural change in the liver, and do not explain its physiological or pathological importance. The fact of its accumulation in the blood is strong evidence of its excrementitious function, but this does not appear to have attracted the attention of the observers just mentioned. The following is one of the cases in which increase of the cholesterine was observed by them, the only one in which they allude to its significance, and here merely to state their inability to explain it:—

"The second case is nearly similar, excepting the phlegmasia, which did not exist. It relates to a boy, nineteen years of age, a *limonadier*, affected for some time with a bilious diarrhœa, with fever, and icterus, recently developed and very marked. There existed in the blood of this patient a slight diminution of the globules (136); albumen in normal quantity (71.4); likewise fibrin (2.3); fatty matters sufficiently abundant; seroline in an imponderable quantity; cholesterine excessively abundant (0.798); soaps abundant (2.032) *To what cause must we attribute this great quantity of cholesterine? How and why is it concentrated in the blood in spite of the biliary flux? This is what it is difficult to decide.*"†

The acquaintance we now have with the physiology of cholesterine removes the difficulty in the explanation of this fact. In Case II. we had the rare complication of jaundice with cirrhosis, the symptoms evidently pointing to poisoning by retention of some noxious element in the blood. Examination of the blood in this case showed that the cholesterine existed in the proportion of 1.850 parts per 1,000; the minimum of healthy blood being 0.445 and the maximum 0.751 parts. Taking this case as an example, we have cholesteraemia with jaundice presenting symptoms which characterize the retention of bile in the blood, which are already well known, and were established long before we were able to say what element was retained. Cases in which jaundice exists with cholesteraemia are so different from cases of ordinary jaundice that there is no difficulty in making the discrimination by symptoms. When jaundice exists

* Frerichs, op. cit., page 95.

† Translated from Becquerel and Rodier, op. cit., page 210. The Italics are my own.

with cirrhosis, it is probable that we always have eholesteremia. In acute jaundice the symptoms, especially those referable to the nervous system, are so marked that the gravity of the case is easily recognized. I have no doubt but in such cases the cholesterine is immensely increased in the blood, though on account of their rarity I had not had an opportunity of determining this by analysis. Icterus with eholesteremia and simple icterus are as distinct from each other as possible. The only feature they have in common is the discoloration of the skin. The simple icterus, which is comparatively harmless, is not liable to run into the more severe variety, which cannot occur without structural change in the liver; while the grave variety occurs when we have evidence of organic lesion of the liver, or presents symptoms from the first which indicate its serious character. The one has no more constitutional danger than exists in a simple case of spasmodic retention of urine, while the other has characters as grave as those which accompany uremic poisoning from disorganization of the kidney.

In these cases the feces may show a very marked deficiency of bile, but this is due to the deficient, but not arrested, secretion of this fluid, while the clay-colored stools in simple icterus are dependent on the want of discharge of the bile into the intestine. While in the latter instance, as in Case I., we would expect to find an absence of stercorine in the dejections, in the former we would expect to find it, though in greatly diminished quantity. Further examination of the feces in cases of structural disease of the liver will be of immense advantage as indicating, by the quantity of stercorine found, the extent to which the eliminative function of the liver is interfered with.

The following analysis was made of the feces in Case II. of jaundice dependent on cirrhosis.

Feces of Case II. Jaundice dependent on cirrhosis.—The feces were clay-colored, though it was not quite as marked as in the Case I. of simple jaundice.

The specimen was evaporated with great difficulty. It came down to a black glutinous mass which could not be pulverized. It was treated twice with alcohol, the alcohol evaporated, and once with ether. After the ether had evaporated it was pulverized and analyzed for stercorine, with the following results:—

Quantity of feces,		272.1 grains.
Stercorine,		0.077 "

In this analysis we have a very great diminution of the stercorine in the feces, the normal quantity in the daily passages, according to the single examination I have made, being 10.417

grains. The specimen was the ordinary amount passed daily. It showed that the cholesterine was still eliminated, though not with sufficient activity to prevent its accumulation in the system. This was further evidenced by the *post mortem* examination, when the gall-bladder was found contracted, but containing a small quantity of bile.

Examination of the blood and feces of the patient suffering under cholesteremia with jaundice, thus leads to the following conclusions:—

1. *The cholesterine is enormously increased in the blood, showing that the structural change in the liver has interfered with its removal from that fluid.*

2. *The stercorine is correspondingly diminished in the feces, showing that the cholesterine is not discharged in normal quantity into the alimentary canal.*

Cholesteremia without icterus.—In a practical point of view, this condition becomes one which it is very important to be able to recognize; but it is here that we feel most the necessity of more extended investigations than it has been possible to make. I have been enabled only to open the subject by the analysis of one or two specimens of blood taken from patients who had organic change in the liver, but no jaundice. One of the most familiar of these affections of the liver consists in those changes of structure which are included in the term cirrhosis. It is very unusual to find this associated with jaundice, and we have already seen how serious this symptom is. Frerichs describes a condition which he calls *acholia*, denoting suppression of the functions of the liver. This is the same condition which I have called *cholesteremia*, which expresses the element of the bile which produces the toxic effects, the action of which was unknown to Frerichs, while the term *acholia* expresses retention of bile without giving us any idea of the active morbid agent. Further investigation will, undoubtedly, establish more fully what the analyses I have made thus far seem to show, namely, that in what Frerichs calls *acholia* without jaundice, we have the cholesteremic condition we have seen to exist in *acholia* with jaundice. The following quotation from Frerichs' admirable treatise on the liver, gives an idea of one of the conditions in which we have *acholia* (or *cholesteremia*) with or without jaundice.*

"Cases have repeatedly occurred to me, in which individuals who for a long period have suffered from cirrhosis of the liver, have suddenly presented a series of symptoms which are foreign to that disease. They have become

* Frerichs, op. cit., page 241.

unconscious, and have been afterwards seized with noisy delirium, from which they passed to deep coma, and in this state have died. In one case there was spasmodic contraction of the muscles of the left side of the face. In most cases, slight jaundice made its appearance at the same time, and in one instance there were petechiæ. Upon *post mortem* examination, not the slightest lesion could be detected in the brain, neither were there indications of any acute disease which could account for the derangement of the cerebral functions. The liver, in all cases, presented cirrhotic degeneration in a marked degree, and the glandular cells were for the most part loaded with fat; large quantities of leucine separating from it; the bile ducts contained only a small quantity of pale bile.¹

In certain cases of organic lesion of the liver, and probably in all cases accompanied by the grave symptoms mentioned by Frerichs, we have cholesteremia; but this character does not exist in all cases where the liver is affected, any more than uremia exists in all cases of structural disease of the kidney. Nature not only provides organs which are sufficient for the removal of effete matters from the blood, but provides for conditions in which the function of these organs may be partly interrupted, and yet the excretion go on, a part taking on the function of the whole. One of the kidneys may be removed, and yet the other, increased in sized it is true, is capable of performing the function of both. The kidneys may be partially disorganized, and yet the sound portion be sufficient for the depurative function, and urea will not accumulate in the blood. So it is with the liver. We see patients with partial disintegration of this organ, as in some cases of cirrhosis, suffering apparently but little inconvenience from the disease, and presenting none of the symptoms of cholesteremia. But when the liver is extensively affected, so much so that it cannot separate the cholesterine effectually from the blood, we have the condition of cholesteremia. I have made an analysis of the blood of two patients affected with cirrhosis, who presented this contrast as regards the symptoms of cholesteremia. In one of them, Case III., there was considerable constitutional disturbance; and in the other, Case IV., the patient was about, and suffered no great inconvenience, though he had been tapped for ascites about thirty times.

CASE III. *Cirrhosis with ascites, and considerable affection of the general health.*—Mary Perkins, æt. 23, native of Ireland, prostitute, has been a spirit-drinker for about seven years, about the first of May, 1862, noticed an enlargement of the abdomen, which was accompanied with pain over the region of the liver, when she took to the bed. She states that at that time the stools were dark green. Fluid continued to accumulate in the abdomen, and was drawn off in the hospital (Blackwell's

Island), June 25. About six quarts of a clear, straw-colored serum were removed, but a little was left in the abdomen, as the patient was very weak. The patient improved after the removal of the fluid, which did not reaccumulate in any considerable quantity. The liver was found diminished in size, and from this and other circumstances, the diagnosis was cirrhosis.

June 28. A specimen of blood was taken from the arm for examination. She left the hospital July 6, and was confined to the bed till within a few days of her discharge.

Analysis of the blood for cholesterine.—The blood presented nothing peculiar in its appearance. A quantitative analysis was made for cholesterine, with the following results:—

Quantity of blood,		117.193 grains.
“ cholesterine,		0.108 “
Proportion of cholesterine per 1,000 parts of blood,		0.922 “

CASE IV. *Cirrhosis with ascites, and slight constitutional disturbance.*—Thomas Hughes, æt. about 33, brewer, presented himself at the Long Island College Hospital, July 1, 1862, with Dr. Dugan, of Williamsburg. He confesses to have been in the habit of drinking more or less spirit daily for the past ten years. The abdomen began to swell about eighteen months ago. The ascites was preceded by hæmatemesis, when he vomited an abundance of black, clotted blood. The belly immediately began to swell, and enlarged rapidly. He took hydragogues under the direction of a physician, and the dropsy disappeared, but returned whenever the medicines were discontinued. Œdema of the lower limbs occurred soon after the ascites commenced. He has had recurrence of hæmatemesis twice since the first attack.

He was first tapped two or three months after the affection occurred, and has been tapped about thirty times since. Was tapped last on the 27th ult. *He is tapped and goes out the next day. He thinks nothing of it, and is always for the time relieved.* He has continued to drink beer daily and some spirit. After tapping his appetite is good, and food occasions no inconvenience. When he is full, food occasions a distressing distention, so that he does not eat freely.

Urine is scanty when the abdomen is full, and free, after tapping.

There is no pain in the belly, or elsewhere. He is about all day, but is not engaged in business. He says he is not very feeble. He presents a notably anæmic aspect.

The abdomen is now moderately full, (July 1.) Superficial

veins of abdomen much enlarged. Heart appears not enlarged; a feeble systolic murmur over the body of the organ.

Several months before the ascites began, he got into a fraecas, and was badly beaten. He was not laid up, but says he did not feel well afterward, and is disposed to attribute his disease thereto.

Advised to continue to tap when the abdomen refills, with tonics, hygienic measures, and abstinence from spirit, continuing the use of ale moderately. (*Private records of Dr. Flint.*)

July 1. A specimen of blood was taken from the arm for examination.

Analysis of the blood for cholesterine.—The blood was treated in the usual way, and a quantitative analysis made for cholesterine, with the following results:—

Quantity of blood,	251.567 grains.
“ “ cholesterine,	0.062 “
Proportion of cholesterine to 1,000 parts of blood,	0.246 “

The following table shows the comparative quantity of cholesterine in these specimens, and in the three specimens of healthy blood:—

HEALTHY BLOOD.			BLOOD OF CIRRHOSIS.	
		Cholesterine per 1,000 pts.		Cholesterine per 1,000 pts.
Male, æt. 35,	.	0.445	CASE III. Cirrhosis, (severe)	0.922
“ “ 22,	.	0.658	CASE IV. Cirrhosis, (mild)	0.246
“ “ 21,	.	0.751		
CASE III. Cirrhosis (severe). Percentage of increase in cholesterine over minimum of healthy blood,				107.190
Ditto over maximum,				22.769
CASE IV. Cirrhosis (mild). Percentage of decrease in cholesterine below minimum of healthy blood,				42.469

These two cases present a very striking contrast; and the chemical examination of the blood has shown as marked a difference in the quantity of cholesterine, as in the gravity of the attendant symptoms. It teaches, however, an important lesson.

We do not always have an accumulation of cholesterine in the blood when the structure of the liver is altered; it being requisite that this alteration should involve enough of the organ to interfere with the elimination of this substance. The quantity may even fall below the natural standard, in a patient who is rendered anæmie by the consequences of a cirrhosis, which is not sufficient to induce cholesteremia. The process of nutrition being thereby diminished in activity, the production of this substance, by destructive assimilation, is necessarily diminished. The cholesteremia may be slight and transient; for the causes which produce it may be to a certain extent, temporary. In Case III. we have the patient confined to the bed, suffering acute pain over the region of the liver, in all probability due to a slight

degree of inflammation. This interfered with the excretion of cholesterine, and we find its proportion in the blood increased to 22.769 per cent over the maximum, and 107.190 over the minimum.* As the patient was somewhat enfeebled by syphilis before the symptoms of disease of the liver made their appearance, it is probable that the quantity of cholesterine in the blood did not mount up to the highest standard in health. At all events, there was a notable increase even over the maximum quantity. Case IV. is not less instructive. Here we have a patient who has had cirrhosis of the liver, with ascites, for eighteen months, and has been tapped upwards of thirty times. He apparently has suffered from nothing more than the mechanical effects of the liquid, which has interfered at times with digestion, and rendered him anæmic. He is tapped, and immediately relieved, going out the next day. We do not seem to have any interference with the functions of the liver, as far as the symptoms are concerned, other than the mechanical obstruction to the circulation, and the case, in its symptoms, resembles one of those cases of ovarian dropsy, where we have the patient carrying about an immense quantity of water, but suffering only from this circumstance, and relieved temporarily when the water is removed. Considering the state of the patient, we should not be surprised to find the cholesterine of the blood not increased, but diminished in quantity; and we may, I think, come to the conclusion from the symptoms, as well as the analysis of the blood, that though the liver was affected sufficiently to produce obstruction of the circulation, there was not sufficient disease to produce cholesteremia.

It is evident that much more extended observations are necessary in order to establish the clinical relations of cholesteremia without jaundice; but the case of Mary Perkins shows that this condition does exist, while the case of Thomas Hughes shows that it does not follow structural change in the liver, unless the lesion be extensive. The fact that we may have poisoning of the blood by the retention of a biliary matter, *without discoloration of the skin*, is exceeding important; and of this there seems to me to be no doubt. When we have a patient who has structural disease of the liver, and presents symptoms of blood-poisoning, he is suffering under *cholesteremia*, though there be no icterus. The cholesteremia may vary in degree from the mildness which characterized Case III., in which it was, perhaps, temporary,† to the grave condition mentioned

* Unfortunately the character of the stools was not noted.

† The patient having gone out of the hospital, it was impossible to settle this point experimentally,

by Frerichs, characterized by noisy delirium and coma, and announcing a speedy fatal termination. When we add to these conditions the cases of what is ordinarily called biliousness, attended with drowsiness, an indefinite feeling of *malaise*, constipation, etc., (and all this relieved by a simple mercurial purge, which is said to promote the secretion of the liver), cannot we hope that some light will be shed on their pathology by a knowledge that there is a condition called cholestremia? As yet there is but speculation; but the discovery of the important function of cholesterine opens an almost boundless field of inquiry in this direction; and ere long the physician may talk of "biliousness," and "liver complaint," with some definite ideas of their pathology.

The following table gives the results of the quantitative analyses for cholesterine, which have been referred to in this article:—

Table of Quantitative Analyses for Chlosterine.

			Quantity examined.	Cholesterine per 1,000 pts.
			grains.	
Human blood from the arm.	Healthy male	æt. 35	312.083	0.445
"	"	" æt. 22	187.843	0.658
"	"	" æt. 24	102.680	0.751
"	"	Simple jaundice.	212.428	0.503
"	"	Cholesteremawithjaundice	50.776	1.850
"	"	Cirrrosis (grave)	117.193	0.922
"	"	" (mild)	251.567	0.246
"	"	Hemiplegia—		
	Case I.	Paralyzed side	55.458	—
		Sound side	128.407	0.481
	Case II.	Paralyzed side	18.381	—
		Sound side	66.396	0.808
	Case III.	Paralyzed side	21.824	—
		Sound side	52.261	0.579
Blood from carotid			179.462	0.774
"	"	internal jugular	134.780	0.801
"	"	femoral vein	133.886	0.806
"	"	carotid	140.847	0.768
"	"	internal jugular	97.811	0.947
"	"	carotid	143.625	0.967
"	"	internal jugular	29.956	1.545
"	"	femoral vein	45.035	1.028
"	"	carotid	159.537	1.257
"	"	portal vein,	168.257	1.009
"	"	hepatic vein	79.848	0.964
Human brain (subject killed instantly)			159.753	7.729
"	Case II., (killed instantly)		150.881	11.456
Human bile (specimen from Case II.)			224.588	0.618
Crystalline lens (+ lenses from the ox)			135.020	0.907
Meconium			170.541	6.245

CONCLUSIONS.—The observations contained in the preceding article seem to the writer to justify the following conclusions:—

1. Cholesterine exists in the bile, the blood, the nervous matter, the crystalline lens, and the meconium, but does not exist in the feces in ordinary conditions. The quantity of cholesterine in the blood of the arm is from five to eight times more than the ordinary estimate.

2. Cholesterine is formed, in great part if not entirely, in the substance of the nervous matter, where it exists in great abundance, from which it is taken up by the blood, and constitutes one of the most important of the effete or excrementitious products of the body. Its formation is constant, it always existing in the nervous matter and the circulating fluid.

3. Cholesterine is separated from the blood by the liver, appears as a constant element of the bile, and is discharged into the alimentary canal. The history of this substance, in the circulating fluid and in the bile, mark it as a product destined to be gotten rid of by the system, or an excretion. It pre-exists in the blood, subserves no useful purpose in the economy, is separated by the liver and not manufactured there, and, if this separation be interfered with, accumulates in the system, producing blood-poisoning.

4. The bile has two separate and distinct functions dependent on the presence of two elements of an entirely different character. It has a function connected with nutrition. This is dependent on the presence of the glyco-cholate and tauro-cholate of soda, which do not pre-exist in the blood, subserve a useful purpose in the economy, and are not discharged from it, are manufactured in the liver and peculiar to the bile, do not accumulate in the blood when the function of the liver is interfered with, and are, in short, the products of *secretion*. But it has another function connected with depuration, which is dependent on the presence of the cholesterine, which is an *excretion*. The flow of the bile is remittent, being much increased during the digestive act, but produced during the intervals of digestion, for the purpose of separating the cholesterine from the blood which is constantly receiving it.

5. The ordinary normal feces do not contain cholesterine, but contain *stercorine* (formerly called *scroline*, from its being supposed to exist only in the serum of the blood), produced by a transformation of the cholesterine of the bile during the digestive act.

6. The change of cholesterine into stercorine does not take place when digestion is arrested, or before this process com-

mences; consequently, stercorine is not found in the meconium, or in the feces of hibernating animals during their torpid condition. These matters contain cholesterine in large abundance, which also sometimes appears in the feces of animals after a prolonged fast. Stercorine is the form in which cholesterine is discharged from the body.

7. The difference between the two varieties of jaundice with which we are familiar, the one characterized only by yellowness of the skin, and comparatively innocuous, while the other is attended with very grave symptoms, and is almost invariably fatal, is dependent upon the obstruction of the bile in the one case, and its suppression in the other. In the first instance, the bile is confined in the excretory passages, and its coloring matter is absorbed, while in the other, the cholesterine is retained in the blood, and acts as a poison.

8. There is a condition of the blood dependent upon the accumulation of cholesterine which I have called *Cholesteremia*. This only occurs when there is structural change in the liver, which incapacitates it from performing its excretory functions. It is characterized by symptoms of a grave character, referable to the brain, and dependent upon the poisonous effects of the retained cholesterine on this organ. It occurs with or without jaundice.

9. Cholesteremia does not occur in every instance of structural disease of the liver. Enough of the liver must be destroyed to prevent the due elimination of the cholesterine. In cases in which the organ is but moderately affected, the sound portion is capable of performing the eliminative function of the whole.

10. In cases of simple jaundice, when the feces are decolorized and the bile is entirely shut off from the intestine, stercorine is not found in the evacuations; but in cases of jaundice with cholesteremia, the stercorine may be found, though always very much diminished in quantity, showing that there is an insufficiency in the separation of the cholesterine from the blood, though its excretion is not entirely suspended. After death, but a small quantity of bile is found in the gall-bladder.

In concluding, I beg leave to express my acknowledgments to my assistant, Mr. Henry E. Paine, of Providence, R. I., one of the residents of the Bellevue Hospital, who has assisted me indefatigably in the analyses and experiments which form the basis of this paper; and to whose intelligent aid I am greatly indebted for the amount of labor which I was enabled to accomplish in a comparatively short time. This aid, with the advantages of the great hospital at Blackwell's Island, which was

laid under contribution for the pathological observations, enabled me to carry on a portion of the analyses uninterruptedly for about two months.—*American Journal of the Medical Sciences.*

Editorial.

TRIAL OF WM. HOPPS FOR MURDER.

In the last number of the *Examiner* we copied so much of a report of the testimony of Dr. McFARLAND as exhibited the grounds on which the prisoner's council based his defence, from one of the daily newspapers of the city. If we erred in doing so, the error is more than compensated by its having elicited the following very interesting and valuable letter from Dr. McFARLAND, which we are sure will be read with much pleasure.

ILLINOIS STATE HOSPITAL FOR THE INSANE,
JACKSONVILLE, *January 17th, 1863.*

DR. N. S. DAVIS,

DEAR SIR:—The last number of the *Medical Examiner*, containing what purports to be an abstract of my testimony in the Hopps Trial, reached me yesterday. So long as it stood printed in the city papers, in the form in which you have it, it gave me little concern; but when spread before the readers of your Journal, as being even any part of a rendering of an intelligible scientific testimony, I must protest, fragmentary, partial, disjointed, and patched,—I hardly recognize my own sentiments among so much of essence in the omission, and of nonsense in the supply. A very good stenographic report of all the medical testimony exists, the production of which might be of interest to the medical public, in view of the high importance of this department of medical jurisprudence. It is one of the signs of an advancing intelligence, that the plea of insanity, in criminal cases, will be set up, even in an increasing number of instances. It signifies little that prejudice and ridicule assail

it, so long as the fact is well established, that it never yet has been sustained by any plural testimony of those deserving the name of experts, where subsequent facts, and a settled public opinion, did not justify the verdict given.

The position of medical science in this part of criminal jurisprudence is being completely vindicated in the history and success of Dr. RAY'S "Medical Jurisprudence of Insanity." Here is a book written by a physician, who paid no regard whatever to the *dicta* of courts in the matter to be treated of. The immutable principles of nature and disease alone governed him, in laying down what should be the path of justice, and he left courts to follow along as best they might. Follow they must, just as surely as intelligence advances among men; yet it is not a little amusing to witness the pulling back and bit-snatching of those who have got to move, whether gracefully or not. One of the incidents of every trial where this defence is set up, is the inevitable battle always to be fought over this modest man's book. Yet, however combatants may suffer, the book always comes out uppermost, with a higher vantage ground for the next contest. The twenty-five years since it appeared have witnessed an immense advance in the enlightened treatment of the plea of insanity, with, however, much yet to be accomplished.

The Hopps Trial is, in a scientific point of view, one of the highest importance. Hardly ever was the main fact clearer, yet never was a defence surrounded with greater difficulties. The fact that some of these difficulties would be removed if the State saw its duty somewhat clearer, is one reason why I wish the privilege of a slight review of the case.

William Hopps is of a family in which the proofs of hereditary insanity are so clear as not to admit of doubt. One brother, after some years of mild mania, is now demented. An adult daughter is to a degree imbecile, having some convulsive affection of the nature of chorea. Testimony which would be conclusive in a medical diagnosis, though technically ruled out of court, show his aunt insane, and throw suspicion on the sanity of prisoner's mother. Twelve years since, Hopps had intermittent, from exposure to protracted wet, in reconstructing a

bridge. It was during and subsequent to that, his disease appeared. The delusion was single, and at first slight. Usually, some slight circumstance, occurring just at the time of the inception of the disease, gives a direction to the delusion which characterizes the case. In this instance, the cue was supplied by some imagined indifference of his wife to his interests, in a certain trifling arbitration in which his pride, more than his purse, suffered. This fatal direction thus given to a delusion, which otherwise might have taken any other form, was the cause of the whole chapter of woes which terminated in homicide. From this period commenced a strain of accusations of infidelity, against a woman so totally above suspicion, as not to have been entertained by any sane mind, which were continued with increasing inveteracy, till the fatal tragedy was the result. At first, her accomplices in guilt were the arbiters in the case, which went adversely, and his accusations were somewhat secret; but, as his mind became more thoroughly under the influence of the delusion, his accusations and abuse were without concealment, and the language of his reproaches more obscene and profane. Two things in relation to these accusations strike the mind as peculiarly significant. The first is: their manifestly paroxysmal character. Sometimes he appears in the evidence as showing great affection for protracted periods. This is especially the case when her fear of him has driven her from home. Then he is, at once, penitent, self-reproachful, and full of entreaties for her return. This is in accordance with the almost universal laws of mental disease. Where a delusion appends to a person or a locality, it is suspended when removed from the locality, or when the person is out of sight. This accounts for a majority of the cures wrought in an insane asylum. Where a delusion appends to a person himself, such, for instance, as the assumption of divine power, being placed in an asylum makes no difference in the progress of the disease; but, if it is a belief that his family are to starve, the chance of its cure is good as soon as they are out of his sight.

Another point in regard to these accusations, is their confinement to one person, and their always being expressed in one

set of terms. As a father and neighbor he was as good as most other men. But for ten years, the sight of his wife seems to have suggested to his mind the idea of unchastity, and, eventually, the foulest pollution. He always assails her in terms implying unchastity, and never of any other vice, or even failing. Under the theory of the prosecution, that this was drunkenness simply, there is something in the fact contrary to all other experience. Who ever knew any other drunkard so special in the person, and so uniform in the terms of his vituperations? The persecuted woman herself seems to have had some idea of the cause of this, from her frequently advising him to take medicine. It does not surprise those who understand how much of a departure from a natural state has to exist in an individual before the majority of persons will regard it as insanity, that even this was viewed as a natural consequence of excessive stimulation, among his children and neighbors generally.

One of the greatest difficulties surrounding the prisoner lies in the seeming impossibility of obtaining credence for the fact that a mental disease and a vicious habit may co-exist; and to create a doubt that where the habit of intemperance and insanity exist together, they are not in relation of cause and effect, would I suspect, be an absolute impossibility? Yet the positive fact is that they *did* co-exist in this case, and were *not* in the relation of cause and effect. The prisoner had an old habit of drinking, indulged freely long before any signs of insanity existed. He drank for many years, and yet was comparatively exemplary as a husband. The abuse of his wife commences at just the date at which other circumstances fix the date of the coming on of his disease. Was there anything in the fact of the prisoner's being insane that would be likely to break up habits of intemperance? Cannot they co-exist? Does insanity mend a man's morals or reform his habits? Is a profane man less profane, a libidinous man less lecherous, or an intemperate man less intemperate after becoming insane than he was before? All experience shows that such vices are usually aggravated when the restraints which reason supplies are taken away. So with the

old habit of drinking confirmed, the effect was, that the vice and disease acted and reacted on each other. When the paroxysm was coming on, he ran to the bottle by that instinct of the disease which feeds a natural excitement with an artificial one. Had there been no such habit created, he would have been insane all the same, and with the same delusion. How much habits of intoxication modified the disease, I am not prepared to say, yet very much less than any appear to suppose. Since the old RUSH theory of insanity was exploded, stimulants are perceived to have less effect on insanity than any could believe who associate it with the idea of inflammation. So naturally does paroxysmal insanity ally itself with indulgence in intoxicating drinks, that some nosologists, under the title of *Dypsomania*, recognize their co-existence as a distinct disease.

The importance of the case lies just here. Shall the incident of a habit of drinking in an insane man, be sufficient alone, and *of itself*, to take away from him that merciful leniency with which the law regards his violent acts? Is it fair to say: the man drinks, and, *therefore*, his insanity must pass for nothing? Is it not possible, in an issue of life or death, to see both states existing in the same individual, each with its distinct responsibilities? Bear in mind that the insanity of Hopps was not a consequence of drinking. Tenterden steeple, in the old story, bore the same relation to the Goodwin sands. Any skilful analyst of symptoms, and their relation to constitutions and causes, will confirm the position before laid down, that the vice and the disease were only co-existing incidents.

It might seem at first sight, that the defence is weakened for want of statements to others of the impressions he was so long conceiving. They occasionally slip from him, as in the conversation with Mr. BRADBURY, Sen., fully enough to show that the declarations made just after the fatal act, and the narrations to medical experts in the jail, are consistent.

A thorough misapprehension seems to exist as to the habits of the insane in regard to their delusions. An idea prevails that the insane may readily be discovered and judged of by the expression of perverted ideas. This is true in but comparatively

few instances. To one delusion among the insane that is patent and revealed, there are ten latent and concealed. The insane express their delusions far less frequently than other men disclose their ordinary motives. They are usually aware that their views will be distrusted, and they become very chary of disclosing them. But after the fatal act was committed in this instance, the delusion exhibits itself in all its force. He calls his neighbors together, asks them to witness his present sobriety, and tells them that the act has been meditated for ten years. His conduct and language during the night, while his wife lay dying in the next room, and all was horror and consternation about him, was that of the most complete self-justification. What merely drunken man, unless totally stupefied, is there who would not have been instantly sobered by such a horrible reality, and thrown into transports of remorse at what he had done? His indifference—or worse—on that night was not due to innate hardness of heart, for even the testimony not favorable to the defence, pronounces him as kind by nature as other men. What but a conviction, firmly fixed and long entertained, that the bloody deed just perpetrated was justifiable and necessary, could have endowed a man with such calmness under such circumstances? And where could have such a conviction had its birth but in the dark and mysterious chambers of mental disease?

None to whom the prisoner has given enough of his confidence since confined in the jail, to narrate the story of the last ten years of his life, for a moment doubt his insanity. Broken, scattery, and divergent, as his story is, he gives a history in which the progress of a disease is singularly plain. As is general among the insane, objects appear dark or light to him as the mental eye is obscure or clear. We see, in the story being told, those places where objects and circumstances are seen in their true, and where in their perverted, relation, according to the state of the sensorium at particular periods. While the object of his insane jealousy was pursuing an even tenor of irreproachable life, of which each day in the year was an exact counterpart of every other; he reviews her life as alternately pure by good resolutions and virtuous conduct, and black with an indiscriminate prostitution.

Could such extreme and varying views of the conduct of one whose daily life was always the same, have arisen from anything but a variation in the condition of the spectrum on which they were impressed?

I have stated that there are deficiencies in our system of juridical administration which add to the difficulties of the case. We neither have any adequate method of bringing the tests of science to bear on the investigation of the case and its elucidation before the tribunal of justice, nor have we any alternative in such a case as Hopps', between absolute acquittal and discharge, and the penalty of death. In the defence on a plea of insanity, the expert witnesses stand in the bad light of partisans. They are not allowed the privilege of neutrality. In most of our courts they are sworn in the same motley group with witnesses of fact, and it is a chance if they do not have to stand the same pettifogging fire on a cross-examination, to which those luckless unfortunates are yet subject, notwithstanding the march of refinement everywhere else.

STERNE was not the last who must say: "They order these matters better in France." There, when the line of defence is adopted in a case of alleged insanity, the prisoner is removed to where he can be subjected to skilful *espionage* by those who have something at stake in rendering an opinion. In that way the tests of a mental condition become infallible. Now, what to our shame, as the respecters and conservators of justice, have we seen in Hopps' case? Intoxicating liquor, apparently without stint or limit, is supplied the prisoner *by the demijohn*, when all being dark both behind and before him,—every manly incentive withdrawn,—he has no earthly inducement to keep above the brute! And, as if to show that a lower depth of cruelty and baseness could be reached, *the liquor account-book is brought into court, and read by the doggerel-keeper who owned it*, item by item,—so many X's to the ale, and so much proof to the whiskey,—to show, on the part of the prosecution, how much of specific liquors was necessary to drown the horrors of the man whenever a gleam of reason enabled him to see whatever was black behind and cavernous before him! What a preparation

for a trial where life or death is the issue! Yet it is through such scenes as these, that reforms in the administration of an enlightened justice, have to come.

Another very great evil in doing exact justice to such a case, is, that neither in our laws nor in the provisions made by the State for the exigencies of an enlightened judicial administration, is there any halting-place, where an atrocious homicide has been committed, even in cases where insanity is well proven, between the scaffold and an absolute acquittal, with full liberty afterwards. The most strenuous advocate of a justice made to conform to the conditions of mental disease, holds that where a life has been sacrificed, the offender should be permanently placed beyond the possibility of further inroads on the safety of persons or property. The manner of this isolation, as we are at present circumstanced, is attended with great difficulties. Those who have in charge the interests of institutions for the insane, protest in the most emphatic terms, against their admission among those whose misfortune should not be enhanced by the compelled presence, of persons having the taint of a bloody crime upon them. Every consideration of humanity supports this protest. The shedding of blood seems to beget, in one not supported by the aid of reason, that tiger-like instinct which craves the effusion of still more; and persons who have committed homicide, and been acquitted on the ground of insanity, are objects of especial dread by those having the general custody of the insane, from the frequent activity of this dreadful instinct.

Ordinary institutions for the insane have not the elements of custodial security about them demanded for such cases. All their appliances for the restraining of liberty are made as mild and little offensive as possible. Escapes from them are frequent;—a less evil than a multiplication of prison-like restraints. All these considerations, without doubt, suggest themselves to a conscientious jurymen, where an aggravated homicide is defended on the ground of insanity. He justly dreads the possession of liberty by one proven to have taken a life without compunction, and yet, by the terms of his oath, must render a verdict of unqualified acquittal, or must visit upon the prisoner at the bar

the extreme penalties of the law. He will, almost as a matter of course, render a verdict without regard to the plea made, and leave to the executive the care of making investigation and modifying the sentence as the facts may demand. He expects the prisoner, if insane, to reach the lunatic asylum by the somewhat circuitous route of a gallows sentence, and a penitentiary probation. Now, this is all wrong, and indicates a deficiency in the machinery of a thorough administration of justice. If the plea of insanity is at all recognized, some means should be devised to place the accused, before trial, where he can be the subject of an intelligent scrutiny, for a sufficient time to establish the fact. Then, if the defence be sustained, the place of scrutiny should become the place of sentence, where, in common with all persons found insane and transferred from penitentiaries, he should be kept for life, or a lesser period, as the case may be. This system is already initiated in the leading commonwealths of the country. The report of the New York Asylum for Insane Convicts, at Auburn, for 1860, shows more than fifty inmates,—and those consisting entirely of persons transferred from the different State penitentiaries. The number will be largely increased when the contemplated system is so far completed that the institution will have a direct connection with the courts, as it still appears not to have.

The want of some such system as this, makes the duty of experts in cases defended on this plea, an especially unwelcome, and sometimes unnecessary, one. It seems in some cases almost useless to put in this highest of all defenses, when the essentials of safety to the public are entirely wanting, except as they are reached by the indirect manner which we have indicated, and which has to run quite around the plea which science sets up. These considerations are presented in connection with this case, to the attention of the medical profession, to whom all such interests are entrusted.

Very respectfully Yours,

AND. MCFARLAND.

DEATH OF DR. GEORGE COATSWORTH.

We have received the following communication from the officers of the 88th Regt. of Ill. Vols., in relation to their late surgeon. Dr. COATSWORTH was a resident well known in this city:—

The officers of the 88th Regt., Ill. Vols., deeply feeling the loss of their surgeon, Dr. GEORGE COATSWORTH, who died of pneumonia at Murfreesboro, Tenn., January 8th, 1863, were called together by Col. Sherman, when a committee, consisting of Lieut.-Col. Chadbourne, Capt. Sheridan, Capt. McClary, and Lieut. Bigelow, was selected to draft resolutions expressive of their feelings.

Col. Chadbourne, on presenting the resolutions, remarked that he did not feel that the occasion was an ordinary one, that he was opposed to the usual way of calling meetings and passing the customary resolutions. He believed that every one present felt the loss of a true friend in the death of Dr. COATSWORTH.

The resolutions as passed were as follows:—

Whereas Providence has seen fit to remove from us our surgeon GEORGE COATSWORTH by death.

Resolved, that we the officers of this regiment tender to his family our heart-felt sympathy in this their sudden bereavement. We bear willing tribute to his many excellencies of character, and his greatness of head and heart. To us his death is an irreparable loss, and to the profession of which he was so able a member. In our friend we recognize a man of more than ordinary ability and attainments. Our respect and love for him increased, as a continual daily association with him developed those traits of character which a less intimate association would fail to discern. We feel that not only has the regiment by his death lost a true friend and skilful surgeon, but the profession one of its clearest thinkers, most devoted students, and accomplished operators. But though the loss is hard to bear, we find relief in the fact that he died in the noblest way a man can die:—at his post in the laborious performance of his duty.

F. F. SHERMAN, *Chairman.*

J. SEYMOUR BALLARD, *Sec'y.*

EXPLANATIONS:—In this and the preceding number we have occupied more space with selected matter than usual, and have filled nearly all of it with the very interesting and valuable monograph of Prof. A. FLINT, on *Cholesterine*. The reference to plates made in the article, refer to plates accompanying the article as published in the *American Journal of Medical Sciences*, but which of course we could not copy.

THE FUTURE.—Owing to the absence, in the service of the army, of many of our assistants and contributors, we have not been able to keep up the usual supply of Clinical reports, or to publish the *Examiner* promptly on time, during the last six months. This difficulty is now remedied, and we shall soon issue the *Examiner* again on time, and with its *Clinical* department as well filled as is desirable.

Prof. E. ANDREWS; this able surgeon, who has been constantly on active duty as surgeon to the 1st Regt. Ill. Artillery for the last nine months, has returned and resumed his professional duties, both in the University and in private practice.

CHANGE IN A WELL-KNOWN DRUG STORE.—We would invite the attention of our readers to the advertisement of Messrs. BLISS & SHARP, who have recently purchased from J. H. Reed & Co. their well-known Retail Drug Store at 144 Lake Street. They have made such alterations as will enable them to pay particular attention to physicians' orders. Mr. BLISS has been a member of the firm of J. H. Reed & Co. for the past eight years, and consequently, needs no commendation to the patrons of the late firm.

(CIRCULAR No. 13.)

SURGEON-GENERAL'S OFFICE,
WASHINGTON, December 5, 1862.

1. The attention of medical directors is called to the numerous cases of neglect in the transmission of the Weekly Report of Hospitals, and the Monthly Report of sick and wounded.

In future they will require medical officers in charge of hospitals to forward to their office the Weekly Hospital Report, on the last day of each week; and they will promptly forward them to this office, accompanied by a list of such officers as have neglected this duty.

They will also require the Monthly Report of sick and wounded to be forwarded to them, and will transmit them to this office, duly filled up, as to date and place, and also accompanied by a list of names of those officers who may have failed to forward these required reports.

Medical directors will see that the surgeons under their direction are kept duly supplied with blank forms necessary for the above reports.

2. Medical directors having supervision of several General Hospitals, will require from the surgeon in charge of each hospital, daily report of such changes as may have taken place during the preceding day. This report will state the name, company, and regiment of each soldier admitted, returned to duty, discharged, transferred to other hospitals, died, etc. etc., and these names will, from time to time, be recorded in a book kept for that purpose in the office of the medical director.

Every facility will be afforded the agents of the Sanitary Commission, and the friends of sick and wounded soldiers, in procuring such information concerning the inmates of hospitals, as they may, from time to time, desire.

3. Surgeons in charge of General Hospitals will, upon receipt of this circular, report to the commanders of companies the names of any soldiers of their company deceased, or discharged from the service, while in their hospital, and concerning whom these reports have not been duly made.

These reports will strictly conform to paragraphs 152 and 170, General Regulations, to which, for the future, particular attention must be paid.

4. Persons detailed for duty in any capacity in General Hospitals, by medical officers in charge, without proper authority, will not be recognized at this office as hospital employes, and medical officers so employing them will be personally responsible for the wages due them.

They will also be held pecuniarily responsible for any payment over their signature made to cooks and laundresses in excess of the number authorized by regulations to the hospital under their charge.

5. Medical officers are explicitly informed that regulations on the above subjects have been written and published to be observed by them, and the various infractions which, from time to time, they have allowed themselves to make, have not been overlooked in the past, nor will be for the future.

W. A. HAMMOND, Surgeon-General.





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